SELF-TAUGHT : USING THE IMAGINARY CONTINUO AND REDUCTION ANALYSIS AS PEDAGOGICAL APPROACH TO PERFORMANCE STUDIES THROUGH THE LENS OF J. S. BACH'S *PIÈCE d'ORGUE,* BWV 572

by

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Introduction

There are two processes involved in learning music: the mechanical and the musical. The mechanical process encompasses technique and the learning of notes. The musical process involves all other elements of making music beyond the basic elements visible on the page. One of the challenges facing all aspiring musicians is moving beyond the notes on the page and making musical decisions. However, learning to play musically is the difference between simply playing an *instrument* versus playing *music*.

Historically, music students learn their craft from teachers in a manner similar to the relationship between a master and apprentice. But music education changed radically in the early nineteenth century, and this is the basis of the system in use today, especially in conservatory settings. American conservatories and liberal arts colleges require music theory as a part of the academic curriculum, but often an unnecessary divide exists between analysis and performance as if theory has little to offer practical application. This project is certainly not the first attempt to link music theory to performance, but it is revisiting the importance and benefits that reduction analysis can provide to performers, especially organists.

A technique derived from Schenkerian theory called the *imaginary continuo*, originally articulated by William Rothstein,

> A polyphonic melody will reduce to a chordal texture when its non-chord tones are reduced out, its constituent voices are verticalized, and the rule of arpeggiation is applied.[1] I like to think of this latent chordal texture as a sort of imaginary continuo accompaniment that underlies every piece of tonal

[1] The rule of arpeggiation; all tones of an arpeggiated harmony "belong" together as a vertical chord. William Rothstein, "Rhythmic Displacement and Rhythmic Normalization," in *Trends in Schenkerian Research*, ed. Allen Cadwallader (New York: Schirmer Books, 1990), 92.

music – regardless of scoring, texture, or date of composition.[2]

can be used in conjunction with reduction analysis techniques to highlight harmonic and linear relationships. As Allan Cadwallader and David Gagné have pointed out, "…the imaginary continuo can clarify prolongations, stepwise connections, and the melodically fluent character of the underlying framework."[3] This document will explore ways in which the *imaginary continuo* – in conjunction with the foreground and middleground level reduction analysis – allows performers to recognize the underlying harmonic and linear structure and ultimately helps them make musical decisions. The purpose of this project should be beneficial to all musicians in essence. However, the particular audience for this document is organists due to their instrument's unique characteristics. For the purpose of this document, we will focus on two main features of the organ: lack of 'dying fall,' and its inability to change dynamics once the sound is produced. As part of the application of the reduction analysis, I will examine J. S. Bach's *Pièce d'orgue*, BWV 572 in depth as many organists find the piece puzzling because of its dense and complex harmonic exploration and counterpoint. The system of registral designation used in the analysis is as Heinrich Schenker used in his published analyses and is shown below.[4]

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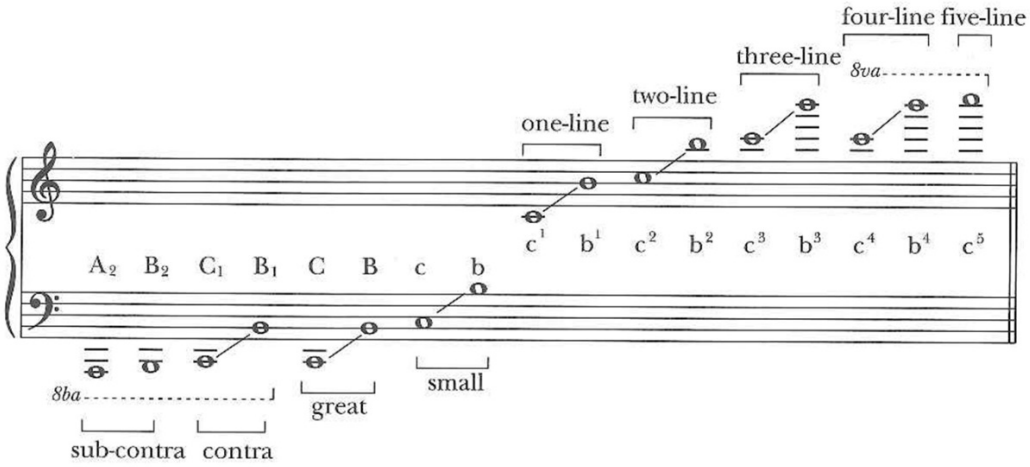
[2] Ibid., 94.
[3] Allen Cadwallader and David Gagné, *Analysis of Tonal Music: A Schenkerian Approach* (New York: Oxford University Press, 2011), 62-63.
[4] Ibid., xiv.


four-line five-line
three-line
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c1 b1 c2 b2 c3 b3 c4 b4 c5
A2 B2 C1 B1 C B c b
8ba
great
small
sub-contra contra

Chapter 1: THE CONNECTION BETWEEN ANALYSIS AND PERFORMANCE

What comes first: the analysis or the performance? In his article, Ryan McClelland wrote: "As someone who is professionally active both as a music theorist and a pianist, I find the line between analysis and performance rather fuzzy."[1] He also says that "Music analysts at the start of the twentieth century, such as Hugo Riemann and Heinrich Schenker, routinely made recommendations for performance.[2] Studies in performance and analysis were the basis of Edward T. Cone 1968 book's *Musical Form and Musical Performance*, and many other theorists reiterated his conception of the relationship between analysis and performance. According to Cone, analysis comes first, and the performer's task is to communicate the analytic understanding to the listener.[3]

As Nicholas Cook noted "the beginning of analysis and performance as a recognized subdiscipline within music theory began with Wallace Berry's book *Musical Structure and Performance.*"[4] Cook stated that this relationship "represents not so much a cross-disciplinary exercise – the attempt to forge a relationship between two fundamentally different activities – as an attempt to incorporate performance within the existing intellectual framework of theory."[5] Both McClelland and Cook describe the tone

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[1] Ryan McClelland, "Performance and Analysis Studies: An Overview and Bibliography," in *Indiana Theory Review*, Vol. 24, Spring/Fall 2003: 95.
[2] Ibid., 97.
[3] Nicholas Cook, "Analysing Performance and Performing Analysis," *Rethinking Music,* ed. Nicholas Cook & Mark Everist (Oxford;New York: Oxford University Press, 1999), 239.
[4] Wallace Berry, *Musical Structure and Performance* (New Haven: Yale University, 1989).
[5] Cook, "Analysing Performance and Performing Analysis," 239.

of Berry's book as strongly directed toward the superiority of theory over performance. On the same token, Cook explains that "Berry's very language locates the intersection of analysis and performance firmly on the theorist's turf; his aim, says Berry, is to investigate 'how…a structural relation exposed in analysis can be illuminated in the inflections of edifying performance'." For Berry, the direction is always *from* analysis *to* performance.[6] Berry is not the only one who has this authoritarian way of thinking about the relationship between analysis and performance. Eugune Narmour claimed, "It is obvious that if formal relations are not properly analyzed by the performer, as well as carefully delineated in the performance itself, then many negative consequences follow."[7] Also, Narmour's approach is to analyze the music first then to derive from this an "analytically justifiable recreative interpretation."[8] Narmour's article also has the dictatorial tone as he frequently demands "what the performer *must* or *must not do*, judging one performance *correct* and another *incorrect.*"[9]

However, is there such a thing as only one correct way for analysis? The purpose of this project is not to say who is superior between theorists and performers, but to reiterate that performers can benefit from analysis to improve their playing. Cook further writes that "there is a new emphasis on the mutuality of the analyst/performer relationship, as against the hegemonic relationship assumed by Berry and Narmour."[10] As Cook summarizes well in his article, Joel Lester points out the desirability of a "reciprocal discourse" between theorists and performers. As he puts it, "Performers could

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[6] Ibid., 239.
[7] Ibid., 240.
[8] Ibid., 240.
[9] Ibid., 240.
[10] Ibid., 245.

enter analytical dialogue *as performers* – as artistic/intellectual equals, not as intellectual inferiors who needed to learn from theorists." Lester continues with "It is the theorist, he says, who need to listen to performers."[11]

Janet Schmalfeldt writes, "Performers and analysts will generally agree that a fine performance of a work expresses a unique understanding of its essence. Most performers describe their effort toward that goal as a primarily intuitive process, a matter of becoming intimate with the work through physical as well as mental activity."[12] She later continues "To performers who may be skeptical about the usefulness of analysis, I can stress, at the very least, that to have an analytic view of a work is to have a basis for the preparation of a performance." She also says that "At the very most, I am convinced that the analytic effort can heighten the performer's confidence."[13] Schmalfeldt is correct about the usefulness of analysis as a ground work for performance. It is sometimes difficult to make musical decisions for young musicians without years of experience or without good understanding of the composition. Therefore, it makes sense that Schmalfeldt suggests analysis as a basis for the preparation of a performance. By analyzing a piece, or referencing an analyst's reading of a piece, a performer can only help their understanding of a piece, which will boost their confidence.

Is playing with intuition devoid of legitimacy? Barry has a strong view dismissing performers' intuitions. He says "The purely spontaneous, unknowing and unquestioned impulse is not enough to inspire convincing performance, and surely not enough to

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[11] Ibid., 245.
[12] Janet Schmalfeldt, "On the Relation of Analysis to Performance: Beethoven's Bagatelles Op. 126, Nos. 2 and 5," *Journal of Music Theory* 29, no. 1 (Spring 1985): 1.
[13] Ibid., 18.

resolve the uncertainties with which the performer is so often faced."[14] Frequently players dive into learning notes and playing with their instincts. I believe that musical instincts possessed by well-balanced players from their long and diligent training can be generally correct. John Rink talks about 'informed intuition' in his review of Berry's book, *Musical Structure and Performance*. He writes that "…good performers are continually engaged in a process of 'analysis', only (as I implied) of a kind different from that employed in published analyses."[15] Rink quotes L. B. Meyer's statement:

> Analysis is something which happens whenever one attends intelligently to the world….The performance of a piece of music is, therefore, the actualization of an analytic act – even though such analysis may have been intuitive and unsystematic. For what a performer *does* is to make the relationships and patterns potential in the composer's score clear to the mind and ear of the experienced listener….analysis is implicit in what the performer does…[16]

Rink continues that "Whereas analysts concentrate on musical structure, performers attend dynamic through its sensitivity to momentum, climax, and ebb and flow, comprising an outline, a general plan, a set of gestures unfolding in time. Attaining a coherent, intelligible 'shape' in performing a work is one of the principal goals of practice."[17] Rink points out that,

> Suffice it to say here that good performers rely at least in part on what I call 'informed intuition' (or 'acquired intuition'), which accrues with a knowledge at the 'submerged level of consciousness' referred to by Berry. This term acknowledges that musicality is probably not innate (although the importance of talent should not be underestimated) but arises through imitation. One plays 'musically' when what has been learned through imitation is made one's own,

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[14] Wallace Barry, *Musical Structure and Performance* (New Haven: Yale University, 1989), 217.
[15] John Rink, review of *Musical Structure and Performance*, by Wallce Berry, *Music Analysis* 9, no. 3 (October 1990): 323.
[16] L. B. Meyer, *Emotion and Meaning in Music* (Chicago: University of Chicago Press, 1956), 29. As quoted in Rink, Review of *Musical Structure and Performance*, 323.
[17] Rink, review of *Musical Structure and Performance*, 324.

> when (in Kerman's words) 'the musician's individuality is…
> brought to bear on the individuality of works of art'.[18]

Rink further writes that "…'informed intuition' in performance develops with greater experiences and, perhaps, exposure to theoretical and analytical principles. Ultimately, the simplest, most direct solution to many performance problems is reliance on this sort of 'intuition' rather than on the complex 'mathematics' of some analysis."[19] He makes the point that "…analytical expertise should certainly be brought to bear on one's performance if this facilitates one's understanding of a piece, but that it is by no means the only way in which to penetrate the work: sometimes, 'informed intuition' is sufficient."[20] He continues that "In this respect, perhaps the *best* analysis of a work is its performance, assuming that the performers have clearly thought through the piece and that listeners are able to infer analytical content by means of 'structural hearing', which is a necessary prerequisite to communication.[21] Of course, this 'informed intuition' needs to be earned by proper training and experiences.

Here is a repeated question: is there only one correct way to make performance decisions? Janet Schmalfeldt writes, "Of all the benefits I have gained from collaborating with my friend the Performer, the first among these is the confirmation that *there is no single, one-and-only performance decision that can be dictated by an analytic observation.*"[22] Joel Lester talks about defining a 'piece of music' as "…it is commonly accepted, I believe, that musical scores are not so much the piece itself as a map of the

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[18] Ibid., 324.
[19] Ibid., 327.
[20] Ibid., 328.
[21] Ibid., 328.
[22] Schmalfeldt, "On the Relation of Analysis to Performance," 28.

piece or a recipe for producing it. However different the metaphors *map* and *recipe* might be, they both suggest that a musical work exists beyond its score."[23] John Rink writes about the notion that "both performance and analysis are interpretations of a work which evolve and (ideally) improve with time."[24] He also refers that "Cone's apt comments on interpretation apply to both analysis and performance: 'Every valid interpretation thus represents, not an approximation of some ideal, but a choice: which of the relationships implicit in this piece are to be emphasized, to be made explicit?'"[25]

It is safe to say that there cannot be only one correct way to make performance decisions. There is always room for imagination. Music making is beyond the written page, and each of us add different means of expression. As Lester describes, "A performance is necessarily only a single option for that piece, delineating some aspects while excluding others – just like a single analysis."[26] Schmalfeldt concludes her article that "…the performer's conscious prior analytic work can be tremendously helpful, but here an additional skill not demanded of the analyst is required of the performer – the creative ability to have moment-by-moment control over relationships in sound."[27] Keith Swanwick says, "It is perfectly possible to approach the music from several quite different angles…Any analytical slice is only a part of any cake; it is less than the total

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[23] Joel Lester, "Performance and Analysis: Interaction and Interpretation," *The Practice of Performance: Studies in Musical Interpretation*, ed. John Rink(Cambridge; New York, NY, USA: Cambridge University Press, 1995), 199.
[24] Rink, review of *Musical Structure and Performance*, 322.
[25] Ibid., 322.
[26] Lester, "Performance and Analysis: Interaction and Interpretation," 199.
[27] Schmalfeldt, "On the Relation of Analysis to Performance," 28.

experience. But analysis does invite us to see the work from the inside; our overall impression may become modified by a new slant."[28] He continues

> As Bernard Shaw says through the character of Undershaft in his play *Major Barbara,* 'You have learnt something. That always feels at first as if you had lost something.' Thus, we lose and gain by knowing more – by being confronted with a different perspective. Analysis not only reinforces what is already intuitively known but can also challenge the security that lies in existing knowledge, disturbing the comfort of the familiar, inviting us to reconstitute our perception.[29]

Different performers may possess a sense of individual expressive identity. Swanwick explains that "This individuality may vary with different performers or for different audiences but in the case of a notated work any variation of interpretation will be within certain limits beyond which we would say that the character of the music has been lost, violated or perhaps transformed into something else altogether."[30] We performers have a common ground that we stand on with the flexibility of placing our personal interpretation on a piece of music. Analysis can guide our instincts to create an educated musical interpretation and provide reasons to confirm our musical decisions.

The main goal of this document is to utilize analysis, more specifically reduction analysis, as a pedagogical tool for self-study. Jonathan Dunsby writes that "It seems to follow that the most helpful way to characterize analysis for the performer, which is bound to be the very least Schenker-influenced, is not as some form of absolute good, but as a problem-solving activity."[31] I do not pretend to understand the uttermost depths of

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[28] Keith Swanwick, *Musical Language: Intuition, Analysis, and Music Education* (London; New York: Routledge, 1994), 13.
[29] Ibid., 13.
[30] Ibid., 18.
[31] Jonathan Dunsby, "Guest Editorial: Performance and Analysis of Music," *Music Analysis* 8, no. 1-2 (March – July 1989): 8.

Schenkerian analysis: however, I do appreciate the fact that "Schenker always valued performance and practical musicianship, and saw himself as both a theorist and an artist."[32] I plan to use reduction analysis as a guide to develop a performer's practical musicianship, which will help one understand the music better because I believe that the analysis does not limit a performer's interpretation, but rather will allow the performer to make more desirable musical choices.

As discussed earlier, there cannot be only one right way of analysis. Performers are consistently analyzing, making musical decisions, and communicating with the listeners. Lester writes that "Welcoming differing interpretations into analysis need not lead to uncritical acceptance of all points of view and a bland relativism. On the contrary, the reality of performance forces one to realise that choices must be made among alternative approaches to any given issue – at least for a particular rendition. Making choices among various possibilities is an important part of any sort of interpretation, both in analysis and in performance."[33] Making choices does not stop at analyzing a piece, but continues with an individual performer's expression. Cook points out that "…performers introduce rubato and other deviations from the notated music, they claim, in order to project or bring out (in a word, to *express*) its underlying structure."[34]

Performers' individuality in their differing modes of expression might be one of the great beauties of music making and – for the audience – listening to different interpretations. For organists, despite the nickname "King of Instruments," the instrument

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[32] Allen Cadwallader and David Gagné, *Analysis of Tonal Music: A Schenkerian Approach* (New York: Oxford University Press, 2011), 4.
[33] Lester, "Performance and Analysis: Interaction and Interpretation," 211.
[34] Cook, "Analysing Performance and Performing Analysis," 242.

poses special challenges to musical expression. This will be discussed more in the next chapter. As Cook further states, "…if analysis and performance are to be seen as interlocking modes of musical knowledge, then they should be pursued simultaneously and interactively not in succession."[35] He continues, "…analysis contributes as process, not as product… what matters about analysis is not so much what it represents but what it does, or more precisely what it leads *you* to do."[36]

Performing is so much more than playing what is on the score. Dunsby writes "The Second-Viennese approach to performance… rests on musical idealism: the musical score, it is hoped, offers the most complete possible evidence of what the composer intended, and the performer has the responsibility of decoding this information and representing it to the last detail in musical performance. The reality is different, if only because musical notation itself, in skilled compositional hands, is so economical with the truth, but in general because of the inescapable halo of historical contingency in the playing, singing or conducting of other people's music."[37] Performers who rely upon detailed analysis, William Rothstein says, "…[are] prone to the error of pedantry."[38] As a medium between a written music and listener, performers should not be passive followers of analysis without our own critical thinking or their own creativity. Rothstein writes, "Determining what those features are (which features of the music are 'brought out', which are concealed, which are allowed to speak for themselves) is the task of analysis – analysis which is best carried out through a combination of intuition, experience, and

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[35] Ibid., 248.
[36] Ibid., 249.
[37] Dunsby, "Guest Editorial: Performance and Analysis of Music," 7.
[38] William Rothstein, "Analysis and the act of performance," *The Practice of Performance,* ed. John Rink (New York: Cambridge University Press, 1995), 218.

reason."[39] Schmalfeldt writes, while emphasizing the benefits of analysis, "… This does not mean that, for the sake of a controlling analytic view, I will forsake the effort to express improvisatory freedom and spontaneity. On the contrary, I believe that I have gained freedom in the security of knowing that I have attempted to absorb a comprehensive study of the work."[40] Rothstein further writes, "The performer's aim in undertaking an analysis is not only to understand the work for its own sake, but to discover, or create, a musical narrative."[41] After a lengthy discussion of the relationship between analysis and performance, Rothstein's statement summarizes what the purpose of this document is, "Analysis, transmuted by imagination and a certain amount of cunning, can help to inspire that magic without which even the greatest music cannot fully live."[42]

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[39] Ibid., 237.
[40] Schmalfeldt, "On the Relation of Analysis to Performance," 19.
[41] Rothstein, "Analysis and the act of performance," 237.
[42] Ibid., 238.

Chapter 2: CHALLENGES AT THE ORGAN

> "There is nothing remarkable about it. All one has to do is hit the right notes at the right time, and the instrument plays itself."
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> (comment attributed to Johann Sebastian Bach by J. F. Köhler, *Historia Scholarum Lipsiensium*, p. 94; cited in Spitta 1880 ii:744)[1]

One of the most famous quotes from J. S. Bach shows great authority and confidence about the capabilities of the organ and the organist. However, it leaves us with a rather large question: is "hitting the right notes at the right time" enough because of the magic of the instrument in the space, or because of the ability for composers to notate everything they wish performers to follow and to express in their score? Legendary English organist Peter Hurford wrote, "The performer who relies for his interpretation solely upon musicological percept and digital dexterity will succeed only in communicating signs."[2] It seems that "hitting the right notes at the right time" falls under the category of "only" communicating signs. The idea of correct notes leaves little ambiguity, but what does "the right time" mean to players? Musical notation developed long after musical performance. Even with immense developments and improvements in complex musical notational systems, strictly following only what is on the page will result in static and mechanical playing leaving the audience little need for interpretation. With today's technology, we can create the most accurate performance of a composition

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[1] As quoted in Kimberly Marshall, "The fundamentals of organ playing," *The Cambridge Companion to the Organ,* ed. Nicholas Thistlethwaite and Geoffrey Webber (New York: Cambridge University Press, 1998), 93.

[2] Peter Hurford, *Making Music on the Organ* (New York: Oxford University Press, 1990), 5.

through computers using high quality sampling of instruments. It would be mechanically correct but not musically satisfying. John T. Fesperman wrote,

> The difference between a machine and an instrument lies in the factor of intimate control which allows *expressiveness*. The word 'machine' suggests such terms as precision, rigidity, mechanical, automatic; one does not readily conceive of an 'expressive machine.' The word 'instrument' suggests precision and flexibility; in the term 'musical instrument,' the idea of expressiveness is inescapable. A phonograph and a music box are 'musical machines': whatever expressive qualities they have are locked in, preset, not variable, except in a mechanical, remote-control kind of way.[3]

It is a strong desire of all musicians to be expressive with their musical instruments, but it is an extreme challenge for organists particularly because of the characteristics unique to the instrument. We will focus on two main features of organs that give us the most disadvantages to be naturally musical.

Hurford summarizes that "All other musical instruments possess a common feature, namely that the length of each note has a natural limit."[4] Human voices and wind instruments are dependent upon the breath through the lungs. For bowed string instruments, the length of the bow itself limits the notes produced. He continues, "Notes on any stringed keyboard instrument have a natural 'dying fall.'"[5] Hurford explains that "…notes produced by the organ have no natural limitation to their length; once a key has been depressed, that note will continue to sound at a uniform volume until the finger (or foot) is lifted."[6] Since there is no exhaustion of sound because the air is provided mechanically, this level of sonic sustainability can be only achieved on the organ. The

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[3] John T. Fesperman, *The Organ as Musical Medium* (New York: Coleman-Ross Co, 1962), 14.
[4] Hurford, *Making Music on the Organ*, 8.
[5] Ibid., 8.
[6] Ibid., 8.

intensity of sound without interruption can be an advantage for certain moments (e.g., contrapuntal music), but this "unnatural" and "unexpressive" nature of the instrument is one of the most challenging aspects for organists trying to play musically. Stravinsky once criticized organ as "the monster [that] never breathes," a criticism unique to the organ but not to the players. The instrument does not need to breathe, but this does not mean that it cannot breathe. It is up to organists to make their instruments breathe. Kimberly Marshall writes, "To sound musical and human, organists must give the illusion of breathing, by using sensitive articulations and shaping of melodic phrases."[7]

Another unique nature of the organ is its inability to change dynamics. Human voices, wind instruments, and bowed instruments are able to make accents and natural dynamic changes during an already produced sound. For example, by adding more and sudden air to human voices and wind instruments, they produce a temporarily louder sound. Similarly for stringed instruments, by adding sudden pressure to the bow, one will achieve a similar effect. Unique to clavichords among keyboard instruments, clavichords are only keyboard instrument where you can bend the pitch after striking the string, but it is still not able to change dynamics. The piano and percussion instruments are able to make sudden accents by controlling the attack of sound. While organs produce sound via air through the pipes, they are unlike other wind instruments such as oboe, clarinet, flute, and others, since the pressure of the air does not affect the volume of the sound, yet it only affects the pipe speech (the higher the air pressure, the more stabilized the air stream that is coming through the pipes.) Organs have a device, called a swell box,[8] with which

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[7] Marshall, "The Fundamentals of Organ Playing," 110.

[8] The swell box is a mechanism where a division of pipes is located in an enclosed box that has movable shutters connected to a pedal at the console or keydesk. By opening and closing these shutters, organists are

we can make gradual crescendi and decrescendi to a certain extent. However, once the sound is produced, there is no control by finger or arm weight to modify any dynamic changes on organs. Jon Laukvik writes, "Dynamics when playing the organ, on the other hand, occur chiefly through articulation and also agogics, that is quasi between the notes."[9]

Articulation in organ playing is defined by the subtle variations of time between notes and the relative intensity of attack. The term articulation may mainly be used in non-legato playing, which is the standard method of playing in the baroque and classical periods. For the purpose of this document, the term "articulation" is kept strictly for the space between notes or the lack thereof. Through articulation, we can organize stronger and weaker beats in a way that highlights metrical hierarchy and emphasis. As Laukvik explains, "When playing equal note values, varying length of each note can achieve the audible accentuation since a relatively long organ note is louder than a relatively short one, because the longer can unfold itself from an acoustical point of view better than a short one. In addition to this comes the fact that the longer break before the accentuated note promotes the transparency of the attack of this note."[10] Laukvik notes "Only a limited variation in dynamics is audible by varying the opening of the pallet[11] - by the

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able to achieve some volume control. This feature is particularly helpful for romantic repertoire. Although we can make these kind of dynamic changes, organists still cannot make sudden dynamic changes by controlling finger pressure or attack of the key.

[9] Jon Laukvik, *Historical Performance Practice in Organ Playing: An Introduction Based on Selected Organ Works of the 16th - 18th Centuries, vol. 1,* trans. Brigitte and Michael Harris (Stuttgart: Carus, 1996), 9.

[10] Ibid., 32.

[11] Pallet; the valve that is located directly under the pipes. The pallet opens and closes the airway to the individual pipe that speaks when the key is depressed.

attack itself."[12] Moreover, this can only be achieved on a tracker action organ.[13] If playing an electric action[14], there is no difference in dynamics when keys are depressed with varying speeds of attack.

Another basic means of expression in organ playing is agogics, which is a way of playing with rhythmic freedom.[15] Hurford uses the term 'agogic accentuation' when referring to alterations of time within the pulse (mainly Baroque music but can apply to all others in theory) in order to avoid confusion with *tempo rubato* that alters time within a musical phrase consisting of several pulses (principally post-Baroque, and mainly 'romantic').[16] Marshall explains that

> Since organists cannot use dynamic variations to emphasize metrically or thematically important notes, they take advantage of acoustical properties to define pulse and to make accents. Preceding a note with silence or delaying a note rhythmically makes it stand out more vividly than others, while lengthening a note relative to others makes it sound stronger. The skillful use of silence and sound enables the organist to create the impression of upbeats and downbeats within a musical phrase.[17]

If we use articulation as our "primary" way of organizing metrical and grammatical accents, we use agogics to show more musical expression. Marshall points out that "…crafting a musical line from the static quality of organ sound demands an extremely

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[12] Ibid., 9.
[13] Tracker action is an interchangeable term with mechanical action. In this system, there is a direct mechanical connection between the key and the speech of the pipe; no electrical connection is used. A quick attack of the key allows the air to pass immediately through the pipe which causes quick pipe speech. This results in the full volume, and can produce a percussive sound at onset sometimes referred to as chiff. By pressing the key slowly, the pallet opens the airway gradually. As a result, the sound production has a slightly swelling quality of the tone, which makes the sound gentler even though sound produced by either attack is equal in volume.
[14] Opposed to tracker action, electric action does not involve any physical connection between keys and pallets. The mechanism is engaged by circuits through magnets.
[15] Ibid., 86.
[16] Hurford, *Making Music on the Organ*, 54.
[17] Marshall, "The Fundamentals of Organ Playing," 96.

sensitive approach to articulation and to timing the notes that make a musical phrase."[18] She continues that "In order to make music on the organ, however, a mechanical approach to accuracy is insufficient; the organist must cultivate different ways of depressing and releasing keys to create the musical nuances possible in other instruments where the tone is produced by the player."[19]

Ultimately, organists are dealing with "the right time" constantly, more so than other instrumentalists, because of the organ's unique features. When is "the right time" to breathe when there is no need to breathe for the instrument mechanically? We cannot use dynamic variations to emphasize metrically or thematically important notes; however, we can achieve similar effects such as accents and dynamic changes by playing with the length of the notes and silence between notes to create the impression of dynamic hierarchy. When is "the right time" to add articulation or agogics? Can there be the right time and place when we should consider placing articulation or agogic accentuation? Or is there a "better" spot in the music or within a phrase where we should use accents? If so, why?

For a convincing musical performance, Hurford says that

> Convincing musical performance calls for an amalgam of dexterity, interpretational technique, and projection. Projection is a skill necessary for the orator as well as for the musician, and certain basic techniques are common to both; accented consonants, musically rounded vowels, tempo, and appropriate silences are the common technical stock of anyone wishing to communicate with others in a convincing manner. To the organist, whose notes have no 'dying fall,' such techniques are vital, for nothing is so stultifying to music as a miasma of uninflected sounds, connected by unbroken legato.[20]

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[18] Ibid., 93.
[19] Ibid., 93.
[20] Hurford, *Making Music on the Organ*, 6.

The focus in this document, among these basic techniques in the quote above, will be agogic accents and the appropriate use of silence, since we as organists must deal with the manipulation of time to project musicality and influence performance. Often times, it is only a matter of the most miniscule amount of timing. Organists can utilize analysis to help us to define "the right time" to breathe, to communicate, and ultimately to perform more convincingly. As explained in the introduction, these are the types of musical decisions in organ performance that benefit from analysis, particularly reduction analysis. The following chapter will discuss this further along with a case study of J. S. Bach's *Pièce d'orgue,* BWV 572.

Chapter 3: CASE STUDY – *PIÈCE D'ORGUE,* J. S BACH, BWV 572

Historical background

Within J.S. Bach's abundant output for the organ, the *Pièce d'orgue,* BWV 572, is unique in its title, form, and style. Peter Williams has noted that there are only two Bach organ works titled *Pièce d'orgue*: BWV 572 (which is well-known by this title) and BWV 532 (called *Pièce d'orgue* in just one manuscript, and which is better known to organists as *Prelude and Fugue*).[1] However, the fourth volume of the complete organ works published by C.F. Peters lists the title of BWV 572 as *Fantasia*. The French title certainly indicates the possible influence of contemporary French style in these pieces. Jonathan Wessler discussed this subject in detail in his article, "French Influence in the *Pièce d'Orgue*, BWV 572," referencing the new edition of *Pièce d'Orgue* by Kenneth Gilbert for Éditions de l'Oiseau-Lyre.[2] Although Bach does not seem to have had any extended study under any particular teacher, we can gather that Johann Adam Reinken, Dietrich Buxtehude, and Georg Böhm exerted a great influence on Bach's music. Böhm, in particular, likely introduced and exposed Bach to French music and performance practice during Bach's time in Lüneburg, during which he was exposed to French music and musicians in the court of Duke Georg Wilhelm and absorbed the French style by

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[1] Williams, *The Organ Music of J. S. Bach,* 40.
[2] Jonathan Wessler, "French Influence in the *Pièce d'Orgue*, BWV 572," *Early Keyboard Music* 25-26 (2010), 61-71.

copying music by French composers.[3] It is also well known that Bach copied the *Livre d'orgue* by Nicholas de Grigny (1672-1703) among other French composers such as Nicolas Lebègue, Jean-Baptiste Lully, Louis Marchand, and Marin Marais.[4] However, as Williams notes, "…*Pièce d'orgue* is not as common a term as one might assume, nor is there a similar movement in de Grigny's *Livre*, Bach's copy of which (*c*. 1709/12) may be contemporary with BWV 572…" One can find similarities between du Mage's *Livre d'orgue* (a book that was known to Bach in which *pièce* appears as a title) and *Pièce d'orgue,* as both start with a free prelude for *petit plein-jeu* followed by a denser contrapuntal movement for *grand plein-jeu.* Yet the opening *plein-jeu* of Jacques Boyvin's *Premier Livre* (1690) shares many features with BWV 572's second section: five voices in *stile antico* with an *alla breve* meter, suspended harmonies (an emphasis on harmonic motion as opposed to melodic motion), and a bass-line similar to a purposeful *cantus firmus*.[5]

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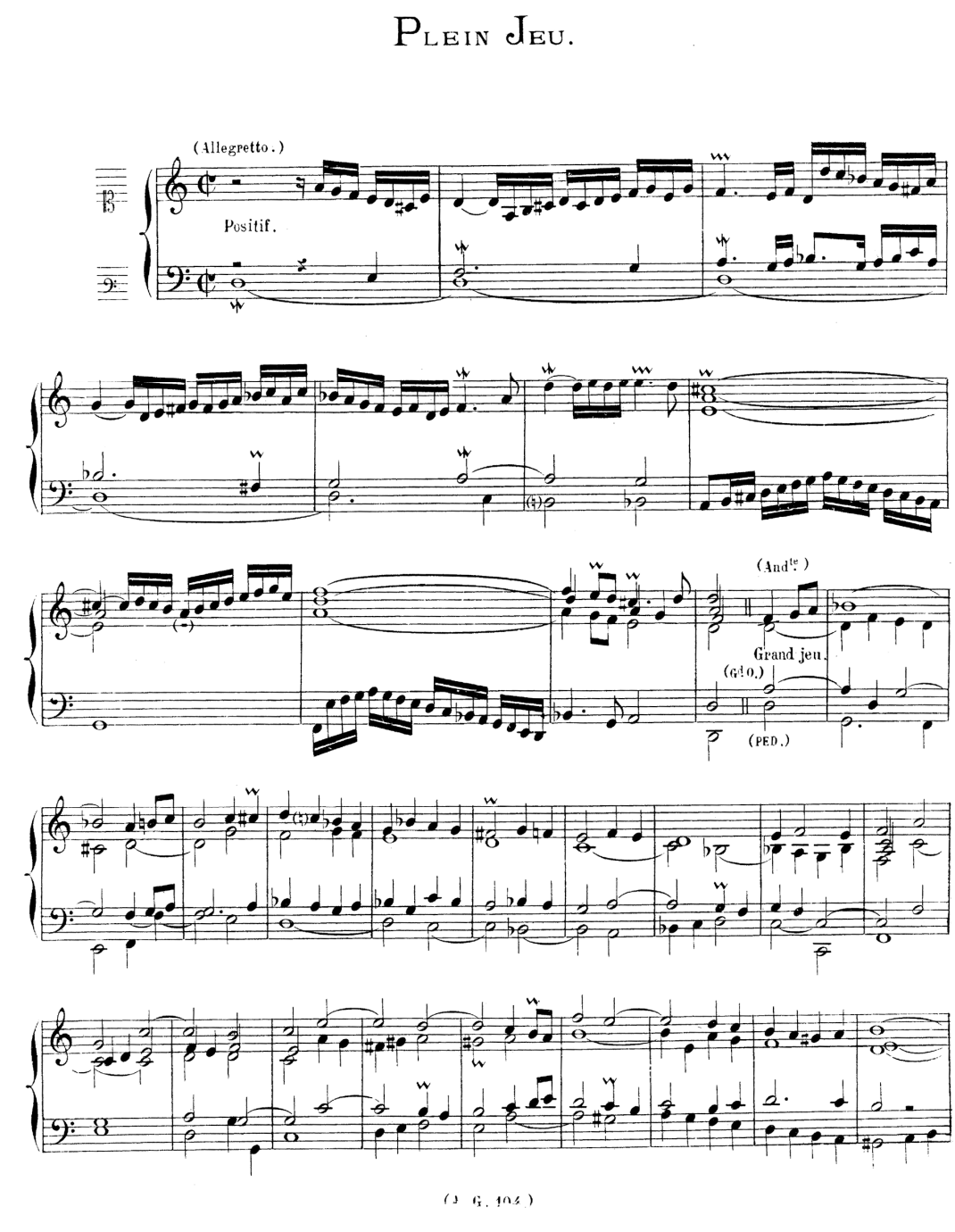
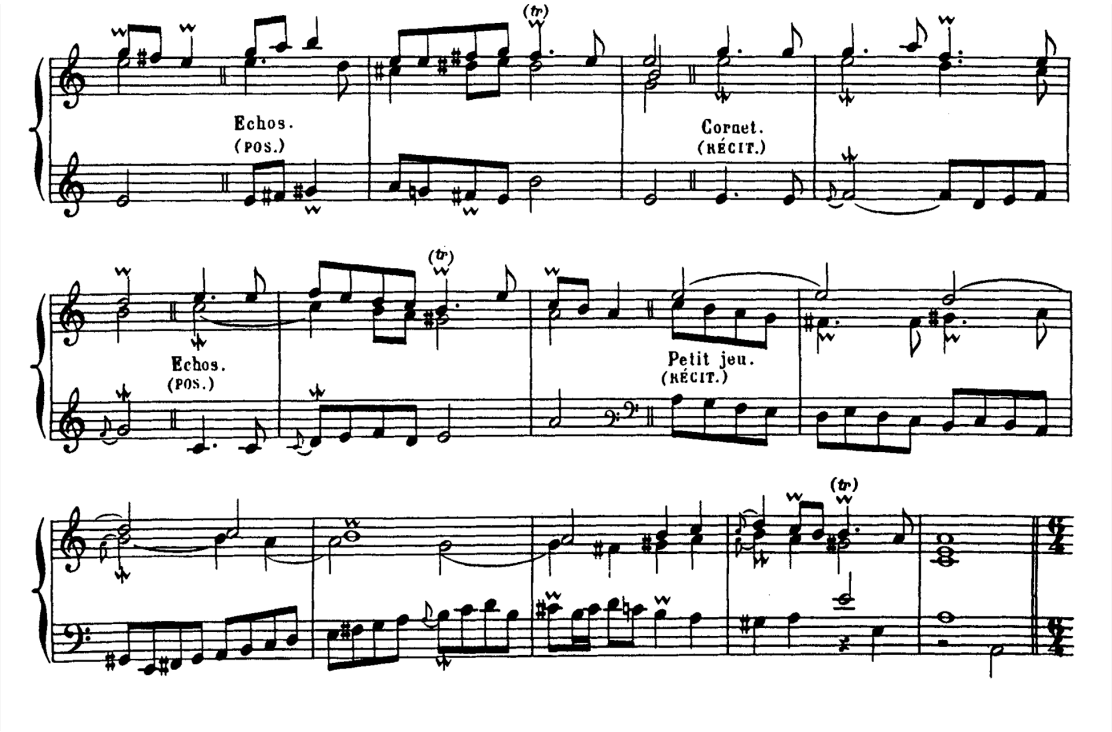
[3] Christoph Wolff, *Johann Sebastian Bach: The Learned Musician* (New York: W. W. Norton & Company, 2000), 65.
[4] Ibid., 73
[5] George Stauffer, "Boyvin, d'Anglebert, and Bach's Assimilation of French Classical Organ Music," *Early Music* 21 (February 1993): 86.



Example 3.1. Pierre du Mage, "Plein Jeu" from *Livre d'orgue.*

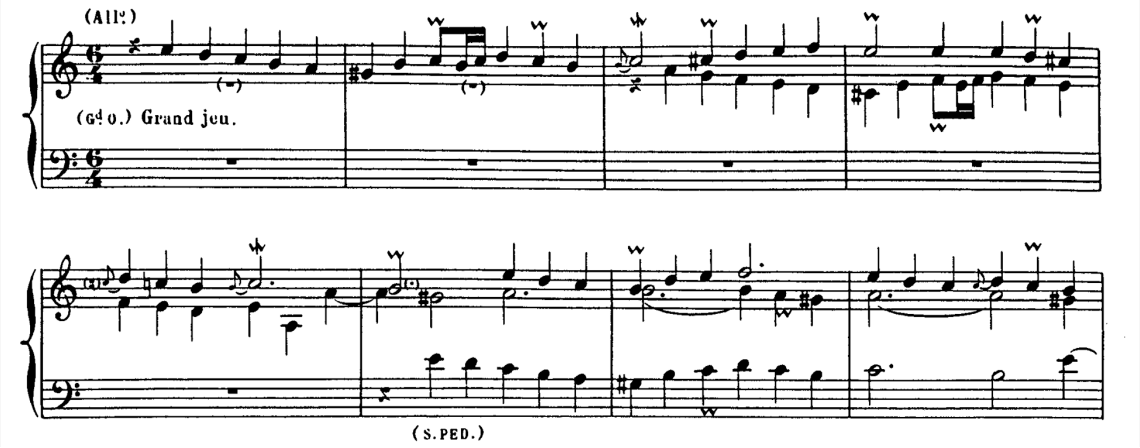
For Bach, the title *Pièce d'orgue* not only suggests French influence, but also implies that it is a multi-sectional piece. Quoting the *Musikalisches Lexicon* of Johann

Gottfried Walther, Jonathan Wessler writes that the musical culture of the seventeenth and eighteenth centuries understood a *pièce* as "instrumental in nature . . . with parts which together constitute a complete piece."[6] While multi-sectional works are not uncommon among Bach's organ works – a clear influence of the North German *Praeludia* tradition – BWV 572's tripartite form is unique due to its lack of regional stylistic precedent. Wessler also speculates that "Bach may have used the multi-sectional pieces of French organ music (such as the *Offertoires* or the *Points d'orgue,* both of which appear in Grigny's *Livre d'Orgue*) as a loose model for this multi-part structure."[7]



(cont.)

[6] Jonathan Wessler, "French Influence in the *Pièce d'Orgue*, BWV 572," *Early Keyboard Music* 25-26 (2010), 62.
[7] Ibid., 62.

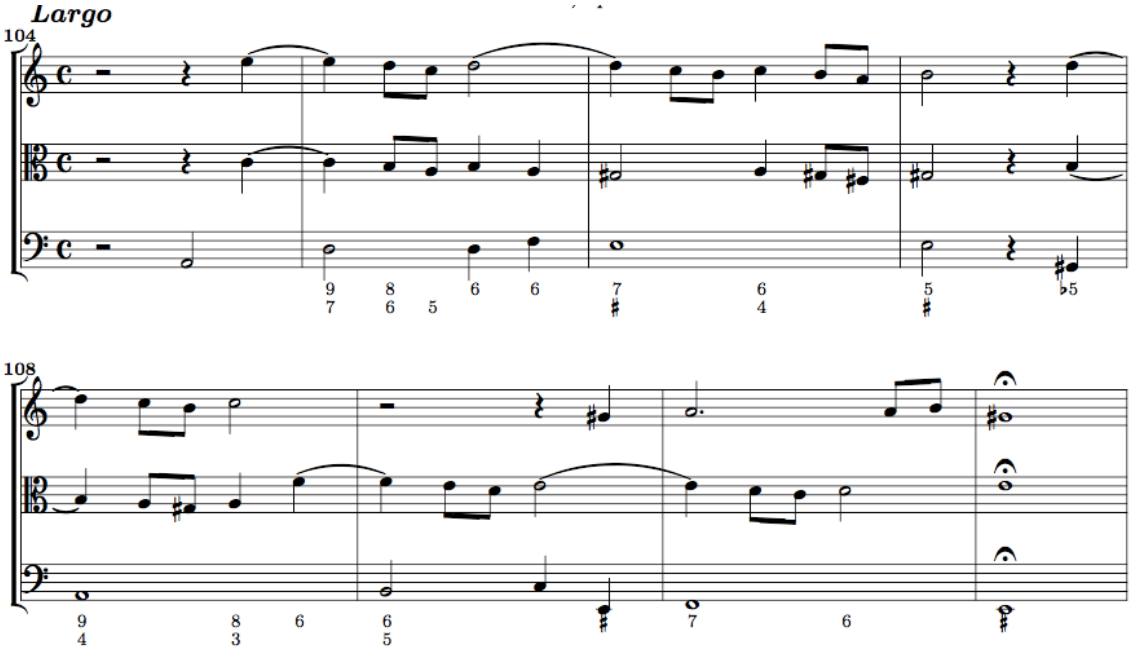


Example 3.2. N. de Grigny, excerpt from "Offertoire sur les grands jeux" from *Livre d'orgue*.

As mentioned above, the middle section shows the influence of Boyvin's *Livre d'orgue,* in the way the piece progresses from a free *prelude* to a sustained polyphonic section. There are two key elements that Bach uses extensively in this section: suspensions and 5-6 sequences. Bach's counterpoint is particularly complex in this section, and the conflict between parallel and contrary motion with double suspensions creates tremendous tension that is frequently resolved only into yet another chain of suspensions. These suspensions represent the style known as *stile di durezze e ligature*, that is, a style marked by abundant dissonance and resolution. Referencing an article by Hans Musch, Wessler summarizes *stile di durezze e ligature*, saying "the term *durezze e ligature* appears, in one form or another, in the titles of many pieces of music from the seventeenth and eighteenth centuries throughout Europe, particularly in Italy."[8] Dom Bédos de Celles (1709-79)

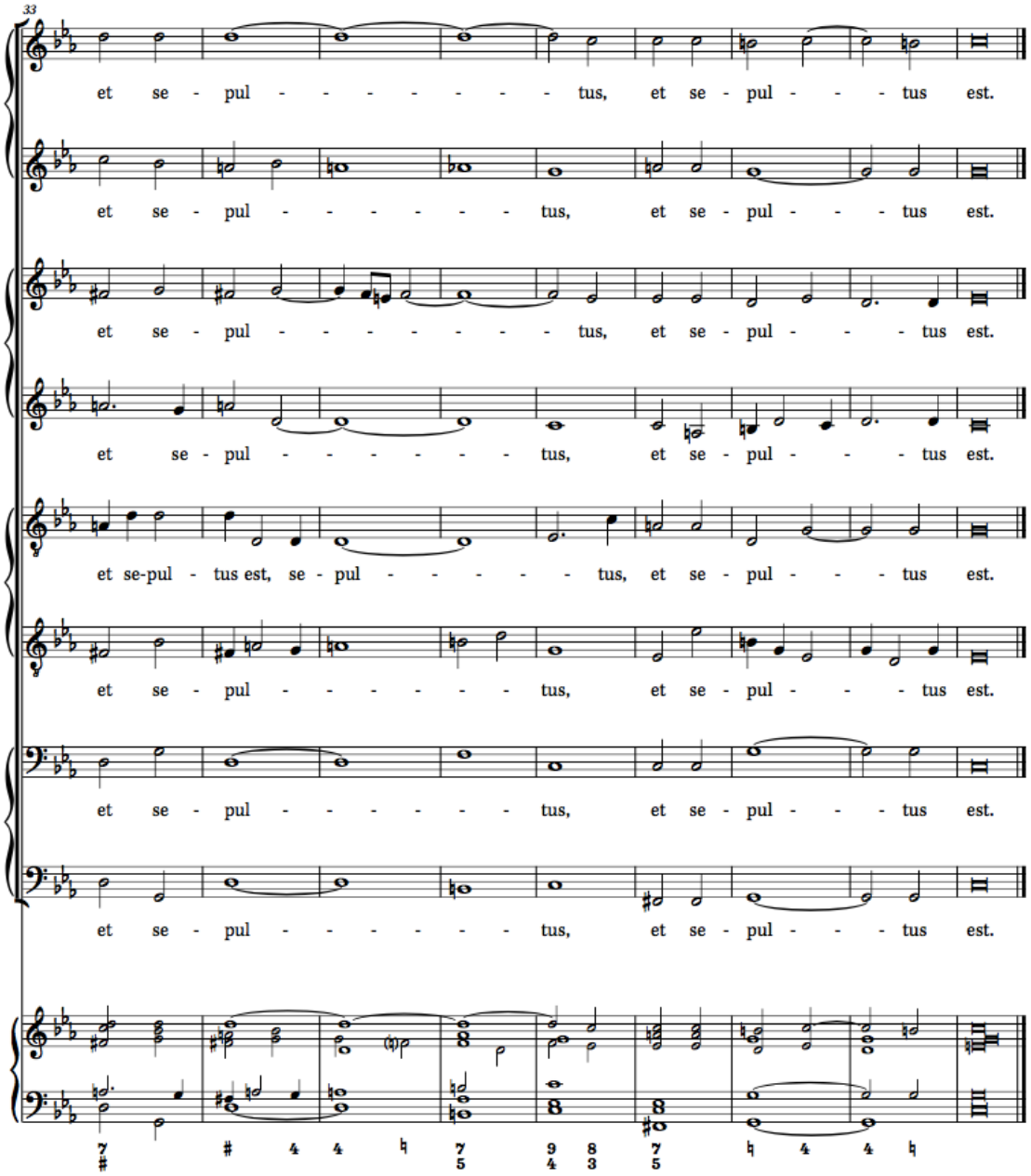
[8] Hans Musch, "Stile di durezze e ligature," in *Die Süddeutsch- Österreichische Orgelmusik im 17. Und 18. Jahrhundert*, ed. Walther Salmen (Innsbruck:Edition Helbling KG., 1980), 141.

describes its usage and execution in the *plein jeu* pieces of the French repertoire.[9] Hans Musch considers the *stile di durezze e ligature* a feature unique to the organ repertoire, as the organ's ability to sustain sound indefinitely allows for the dissonances and suspensions to be more clearly and dramatically heard."[10] Although frequently used in organ repertoire, *stile di durezze e ligature* is not only unique to organ since there are abundant examples of music for instruments and voices which are capable of sustained sounds.



Example 3.3. Buxtehude, excerpt from Sonate V à doi, Violino & viola da gamba, con cembalo.

[9] Ibid., 141-142.
[10] Musch, "Stile di direzze e ligature," 147, as quoted in Wessler, "French Influence," 66.

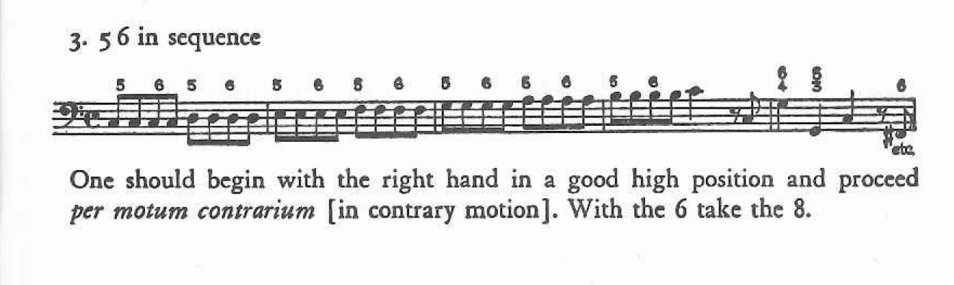


Example 3.4. mm 33-41, from Antonio Lotti, "Crucifixus."

The middle section of BWV 572's harmony incorporates a series of seventh and ninth chords that create *durezza* over ascending and descending lines. As Williams has pointed out, we see this idiom more frequently in Bach's more mature compositions in

the contrapuntal style.[11] For the analysis, we ultimately remove the key elements of the *durezza* style, which allows the core structure of this section to become clear. Despite their removal in the analysis, one should note that the suspensions provide the section constant forward motion due to its rhythmic displacement and incessant search for resolution. However, BWV 572's uniqueness lies in "its length, non-fugal texture, and thoroughness of organization in what is essentially an improvisatory style."[12]

Another device that Bach uses extensively in the middle section is the 5-6 sequence. So fundamental to his contrapuntal techniques and so important for his pedagogical philosophy was this technique that he included it in his *Precepts and Principles* for continuo accompaniment.[13] The example below shows Bach's instructions for executing this procedure correctly.



Example 3.5. Bach, instructions for 5-6 sequences.[14]

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[11] Williams, *The Organ Music*, 169.
[12] Ibid.
[13] "Carl August Thieme, Bach's student for ten years at the St. Thomas School and later the school's conrector, took the cantor's dictation and recorded his *Precepts and Principles.*" in Christoph Wolff, *The Learned Musician*, (New York: W.W. Norton and Co., 2000), 309.
[14] J. S. Bach, "The Precepts and Principles of the Royal Court Composer and Capellmeister as well as Director Musices and Cantor of the Thomas-Schule, Mr. Johann Sebastian Bach, at Leipzig, for Playing a Thorough Bass, or Accompanying, in Four Parts for his Scholars in Music, 1738," in *The Bach Reader*, ed. Hans T. David and Arthur Mendel (New York: W.W. Norton and Co., 1966), 395.

The broken chords with acciaccaturas, after an unexpected diminished seventh chord with a dramatic pause at the end of the middle section, continues until the final cadence arrives. A possible influence of the various acciaccatura traditions was d'Anglebert's *Pièces de Clavecin* of 1689, which Bach copied and was aware of its ornament table.[15] Peter Williams summarizes that "…like the first two sections, the third [section] single-mindedly exploits a particular musical device, pushing it beyond what was traditional. Moreover, in its solo line and inner repetitions the third section is like the first, but in its harmonic continuity more like the second. Together the three survey the three main types of harmonic bass-line: an implied tonic pedal, a rising diatonic bass and a falling chromatic bass, and do so in proportional tempi."[16]

[15] Williams, *Organ Music,* 170.
[16] Ibid., 170.

Analysis

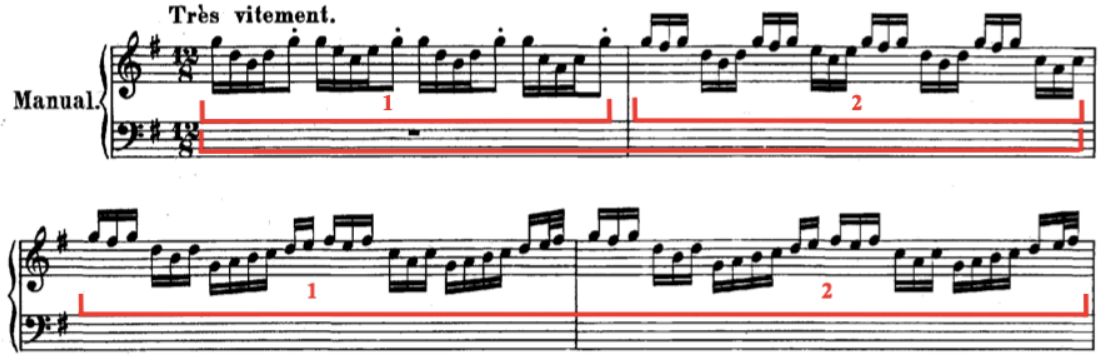
In *Pièce d'orgue,* BWV 572, there is a perpetual drive from beginning to end without pause, with its restless passage work in the first section, abundant and nearly incessant suspensions in the middle section, and brilliant, chromatic figuration in the last section. All three sections explore harmonies in different ways, as will be explored below in greater analytic detail. As mentioned in Chapter II, there is no need for organists to physically breathe to play the instrument, since the wind is supplied mechanically. It is possible to play the entire *Pièce d'orgue* without any breath except the marked dramatic rest between the second and the third sections. Melodically, BWV 572 does not particularly project an interesting or creative contour, as the majority of the piece consists of stepwise motion; however, its harmonic complexity, especially in the middle section, demonstrates Bach's way of creating a harmonic kaleidoscope of constantly changing tonal areas. It can be difficult for performers to articulate local harmonic goals while not disrupting the long range larger structure. Here I present a possible reading of BWV 572, suggesting formal articulations and applications of expressive devices through reductive analysis as a tool to organize harmonic structure and form.

Section I: *Très vitement*

The first section imitates the North German toccata style with broken chords divided between both hands. While organ works of other composers frequently include similar figurations, BWV 572's extended use of brilliant Italianate monophonic passage

work is a rare occurrence in Bach's organ works.[17] The first section is harmonically the simplest of the three sections, but it is remarkable how Bach elaborates a G major tonic area over twenty-eight measures, yet does not lose the listeners' attention. The extended monophonic passage retains its interest by small changes in figurations and explores a wide range covering three octaves. Since the first section has a simple harmonic area, we will focus on its phrase structure.

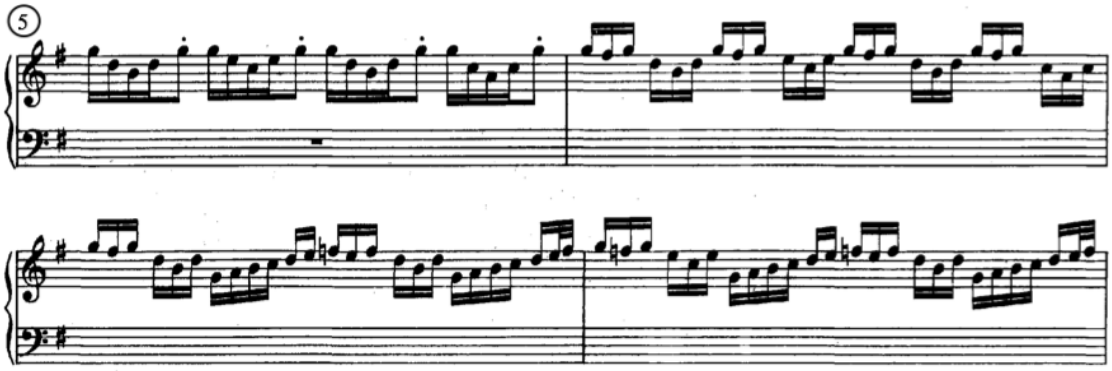
The first two measures share the same harmonic pattern with slightly different figurations. The third figuration is finally repeated to give a sense of forward motion. (See Ex. 3.6)



Example 3.6. mm. 1-4.

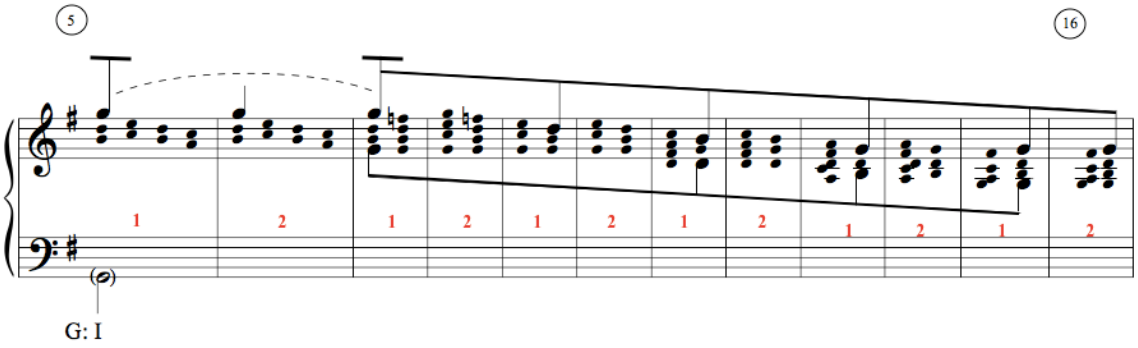
At measure 5, the opening returns once again wandering, still not settling, but has a sense of searching for the "right" figuration. (See Ex. 3.7)

[17] Although rare in the organ works, such monophonic harmonic exploration is more common in the solo suites for cello and violin, most notably the "Prelude" to *Cello Suite no. 1* in G major, BWV 1007.



Example 3.7. mm. 5-9.

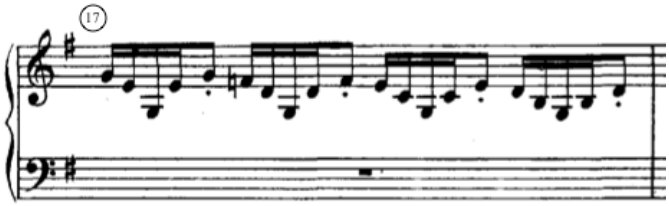
For the next twelve measures, over an implied G pedal point, the two-bar phrase continues until measure 17 where the opening figuration returns. Example 3.8 shows a reduction of these measure. The numbers in red indicate the phrase structure.



Example 3.8. mm. 5-16.

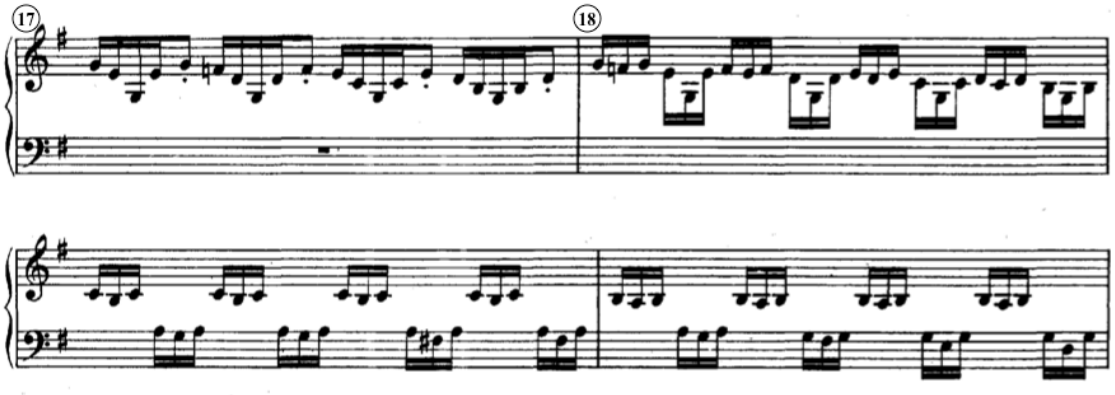
At measure 17 (See Ex. 3.9), the return of the opening figuration breaks a lengthy passage of the same figuration. Instead of a return to the tonic, the return of the opening figuration suggests the subdominant area. The f♮[1] at the end of measure 16 and in

measure 17 supports the sub-dominant, but the brief subdominant moment is weakened by the continued pedal point on G and also the harmonic return to the tonic at the end of measure 17. It is not another starting point, but the motion continues.



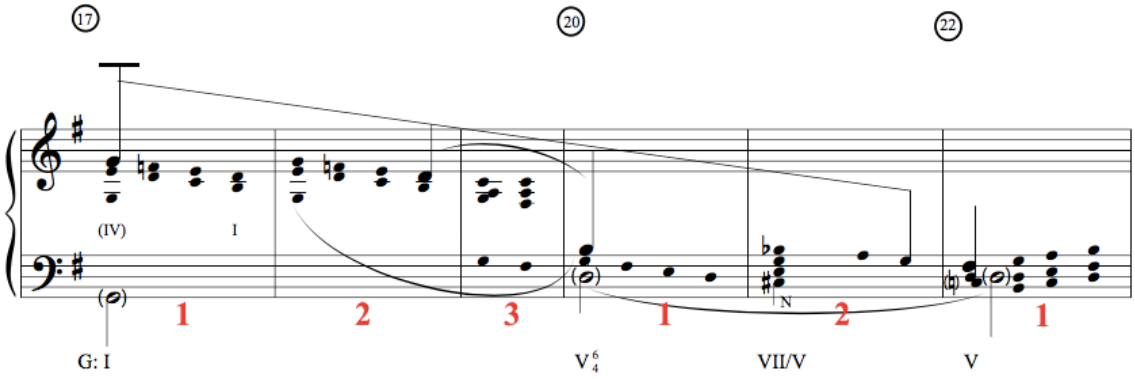
Example 3.9. m. 17.

As in the opening, Bach repeats the same harmonic unit with different figurations at measure 18 (See Ex. 3.10). This alternation between the hands keeps the downward motion bridging from subdominant to dominant at measure 20, and continues the motion until measure 22.



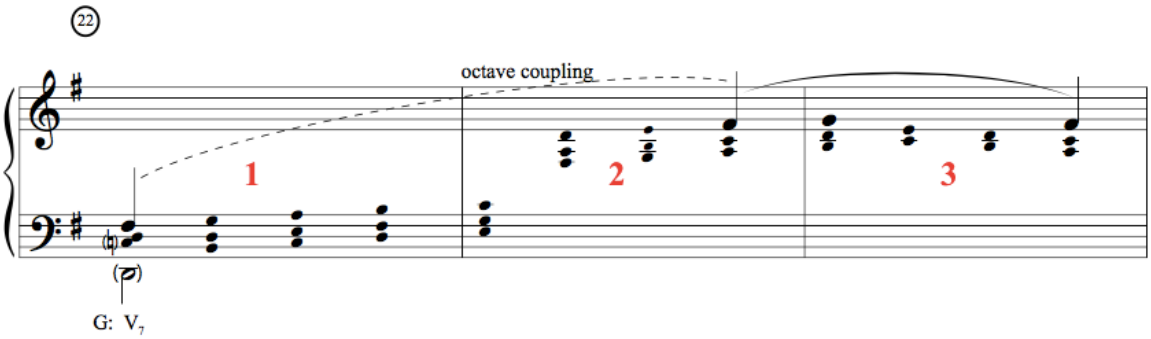
Example 3.10. mm. 17-20.

This relatively regular two-bar unit is disrupted at measure 17. As seen in Ex. 3.11 below, the break of the two-bar phrase coincides with the ambiguity of the subdominant and the arrival of the dominant. The cadential 6/4 in measure 20 leads to the dominant 7th chord in measure 22, where a fully diminished 7th chord in measure 21 is used as a passing chord, and affirms the dominant area.



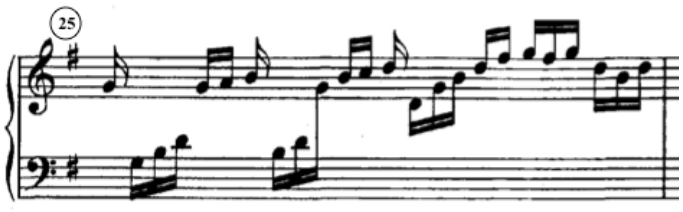
Example 3.11. mm. 17-22.

The lowest register of the top line, f# in measure 22, rises to f#1 over the dominant prolongation. At measure 24, it seems that we have reached the tonic because of a strong G pedal point, but we are still in the dominant area while keeping the same alternating broken figuration. Finally, the long elongated dominant concludes in the tonic in measure 25 (see Ex. 3.12).

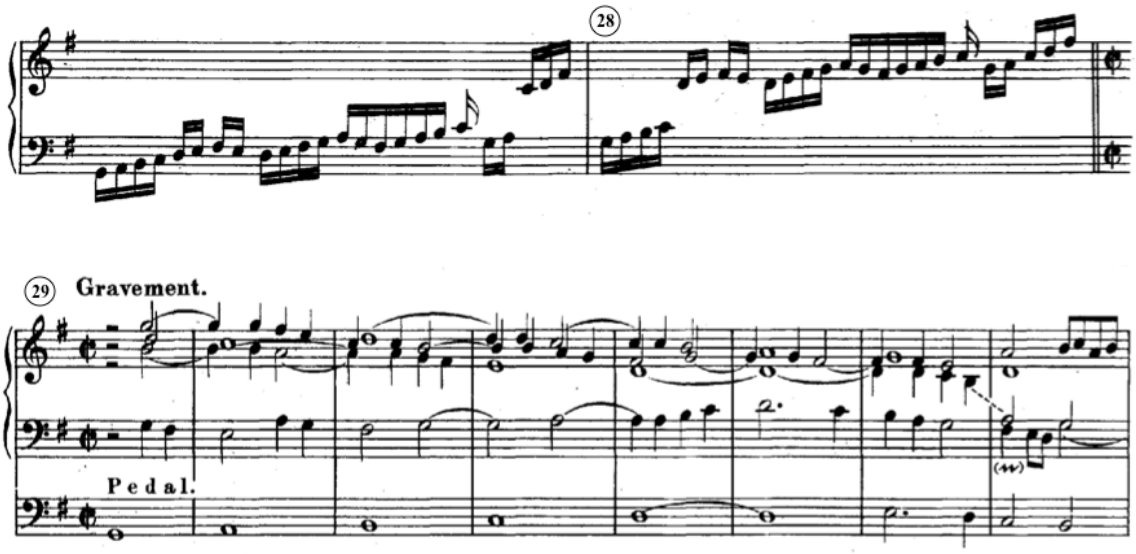


Example 3.12. mm. 22-24.

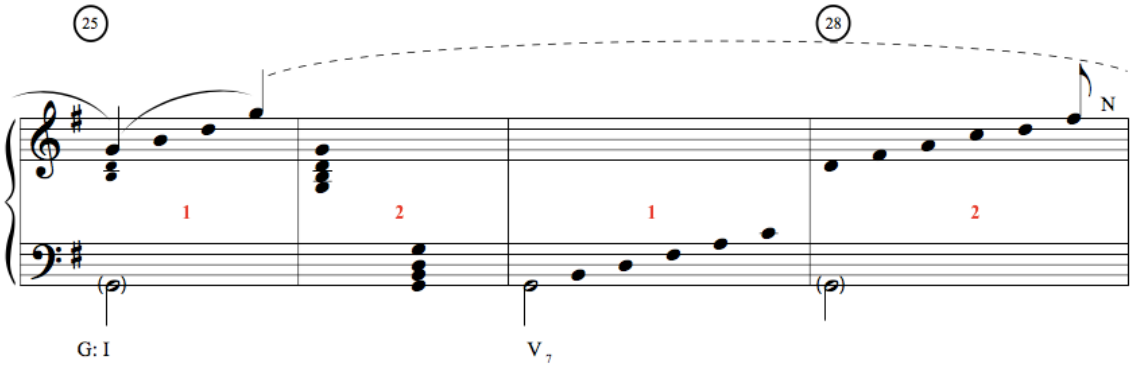
At measure 25, Bach continues the motion, outlining the tonic triad in the span of three octaves. He groups the notes by separating the stems; this shows both the division of the notes between the hands but also it highlights the important pitches that outline the tonic triad. At the same time, it suggests where to place accents and where not to place accents. (see Ex. 3.13). The continuous motion again blurs the arrival of the tonic, but it transitions back to the dominant 7th chord. This time, as seen in Ex. 3.14, the stepwise motion outlining the dominant 7th chord in mm. 27-28 covers G to f#2, linking the first two sections.



Example 3.13. m. 25. Separated stems



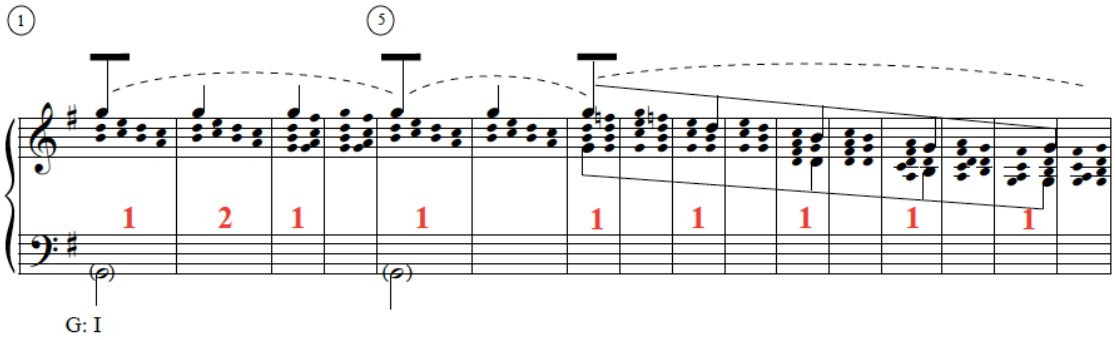
Example 3.14. mm. 28-29, transition.



Example 3.15. mm. 25-28.

Application for Performance

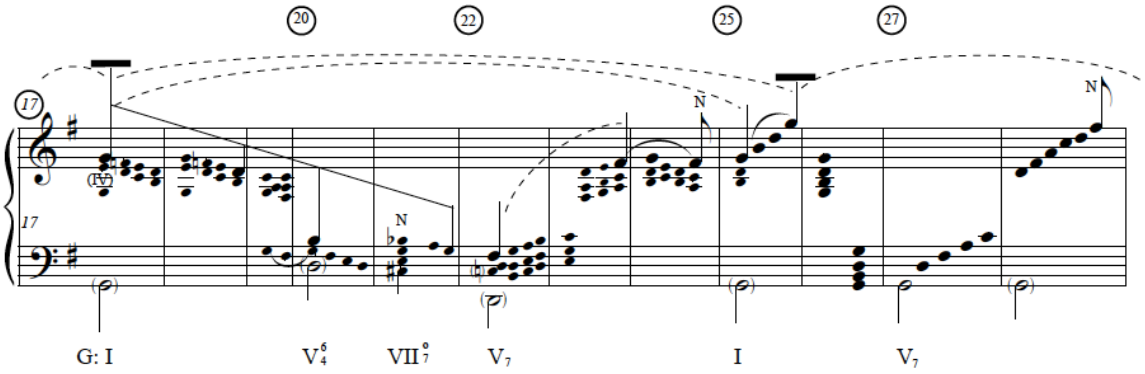
Varying the touch and timing in the beginning three measures can highlight the opening gestures found in these measures. For performance decisions, slight differences can be made by varying touch and timing in the beginning three measures with the introduction of three slightly different figurations. Recognition of the opening material is possible through a slight elongation of the downbeat of measure 5. Since it is a repetition, noticeable differences in measure 6 are unnecessary. At measure 7, as the extended downward motion gets started, small agogic accents are possible at the downbeat of measure 7. The slower harmonic rhythm helps the forward motion. Also, the repetitions (measure 8, 10, 12, 14, and 16) produce an echo effect; it is possible to differentiate articulation to a lighter and more detached touch (see Ex. 3.16).



Example 3.16. mm. 1-16.

As seen in Ex. 3.17 below, although it is not a tonic return, a small elongation is possible on the downbeat of measure 17 for the change of the figuration, which also

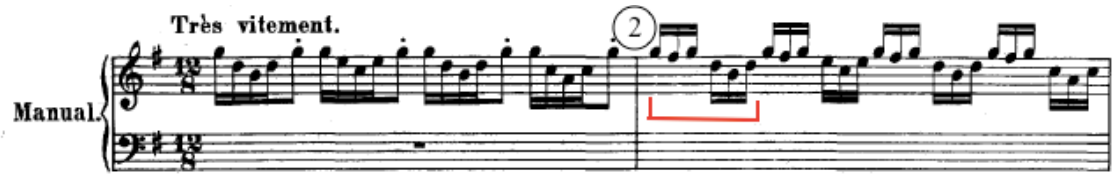
highlights the ambiguity of the harmonic area. This is the lowest point of the upper line, which coincides with the harmonic change to the dominant, also here we prepare an octave coupling to get back to the register where we started. The lowest note of the soprano line, f#, needs an agogic accent in measure 22. The motion continues until we reach g^1 in the tonic on measure 25 where a larger agogic accent is appropriate.



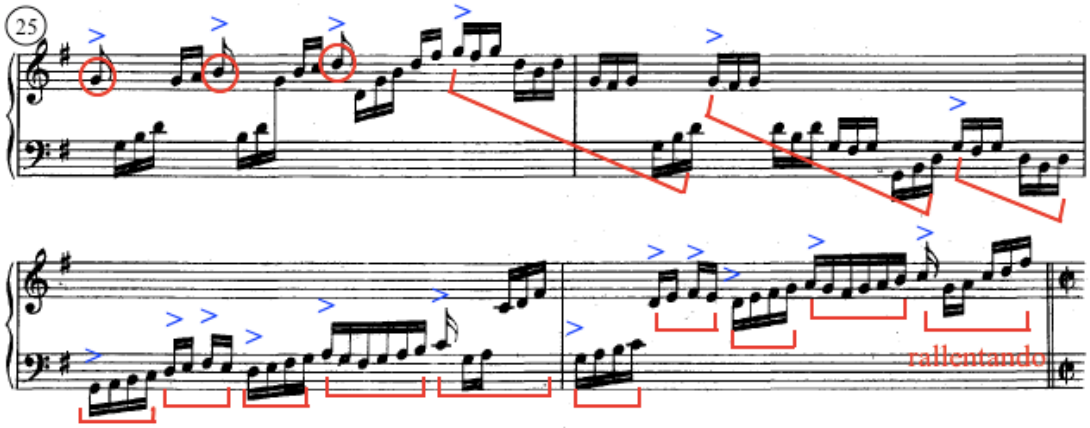
Example 3.17. mm. 17-28.

As indicated by how Bach divides the stems, which already gives natural emphasis on the tonic triad, we can provide tiny separations in articulation before b^1, d^2, and g^2 in measure 25 to accentuate the arpeggiated chord tones. The rhythmic accent has an interesting twist in measure 25. While Bach divides the stems to highlight the tonic triad, the high g^2 does not have a separate stem, but the opening figuration from measure 2 (see Ex. 3.18a) returns on the fourth beat in measure 25. It brings the register back to where it began, g^2, as well as providing motivic coherence. Having the fourth beat accented, the rhythmic displacement continues in measure 26 as the second and the fourth

beats get accents respectively. It is confusing to determine how to organize the rhythm in measures 27-28. By focusing on separated stems, a possible reading can be following the stem divisions for rhythmic interest (see Ex. 3.18b).



Example 3.18a.



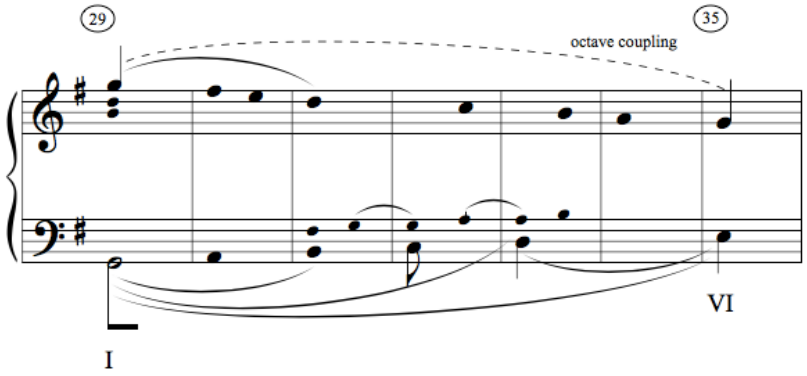
Example 3. 18b.

Example 3.18. (a): figuration from m. 2, (b) mm. 25-28.

The lowest note of the first section, G, which begins the final dominant prolongation deserves a slight elongation, and a small *rallentando* towards the end of measure 28 makes the transition to the middle section more dramatic and the tempo change (*Très vitement* 12/8 to *gravement* 2/2) proportionally smooth.

Section II: *Gravement*

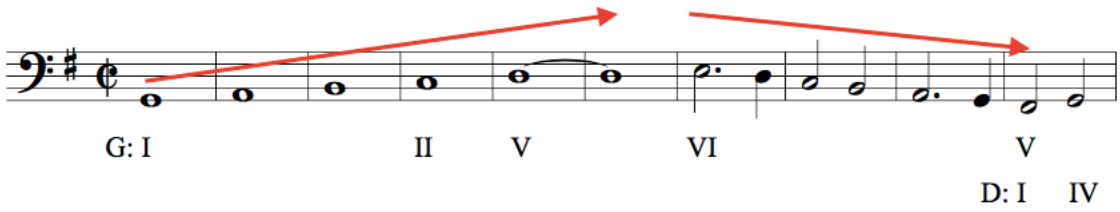
The virtuosic toccata-like first section left us with the anticipation of g^2, but whole-note G in the bass starts the middle section in *stile antico.* The delayed arrival of g^2 is placed on the upbeat over a tonic chord – a well placed half-note rest at the downbeat of measure 29 superbly dramatizes the resolution of the hanging f^2 to g^2. The first passage, in mm. 29-35, is prolonging tonic. Bach spells out a descending G major octave (g^2-g^1) in the soprano while using an ascending G-hexachord as a quasi of *cantus firmus* in the bass, which can be seen in the example below. Williams says that "*Durezza* harmonies often led to rising semibreve scales…" and BWV 572 is no exception.[18] One may expect a tonal closure coinciding with the octave coupling in the soprano with the rising bass line, but instead we have the deceptive cadence at m. 35, which blurs the local harmonic goal (see Ex. 3.19).



Example 3.19. mm. 29-35.

[18] Williams, *The Organ Music,* 168.

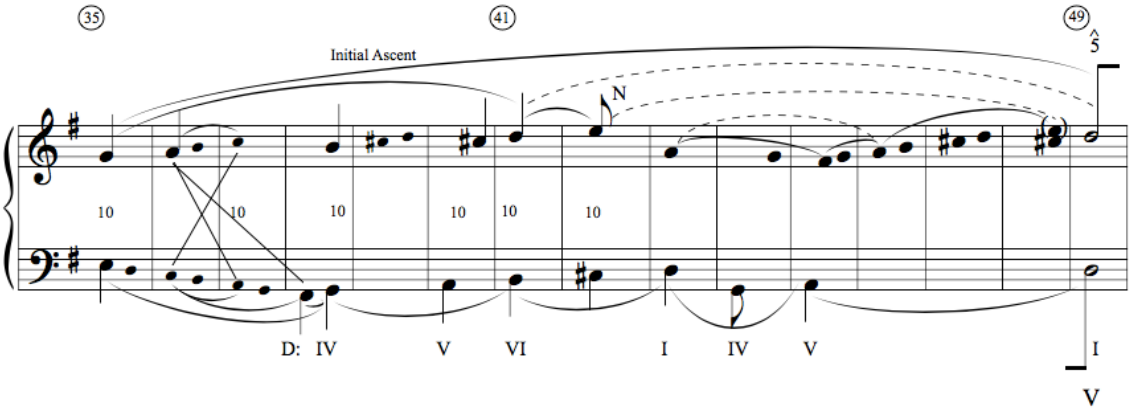
In example 3.20, notice that the bass line changes its direction and the bass rhythm moves from steady whole notes to an active quicker tempo transitioning to D major.



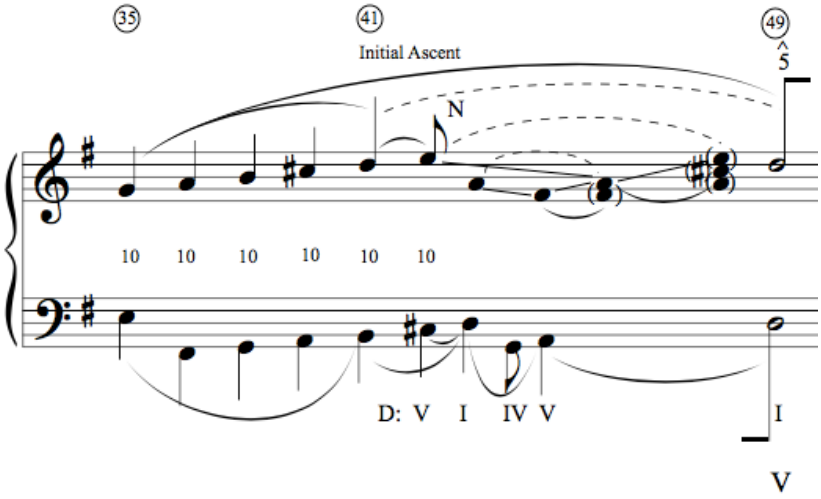
Example 3.20. bass line in mm. 29-35.

At first, it seems that we have reached the primary tone (d^2) of the fundamental line (*Urlinie*) in measure 41 as we have a cadential gesture in D major, but the linear progression supported by parallel tenths in the outer voices continues one step further to e^2 in measure 42. There is an emphasis on d^2 because of the modulation to D major. Therefore, e^2 is considered a neighboring tone of d^2 (primary tone) in measure 49 which is the goal of the *initial ascent* (from g^1 in m. 35) to d^2 in measure 49. The cadential progression is not fulfilled in measure 41 as it moves to VI instead of back to tonic, which is, therefore, another delayed harmonic goal. The top-voice e^2 of V moves into the alto register a^1 over the I in measure 43, but is prolonged at a deeper level because it belongs to both chords. (The parentheses symbolize the implied and mentally retained a^1.) As the bass prepares the first perfect authentic cadence in D major, the soprano regains the upper-voice e^2 (the implied fifth of V) through stepwise ascent, in effect connecting the alto with the soprano registers. The progression I-IV-V-I (an auxiliary

cadence in D major) strengthens the impression of a modulation. Therefore, the first true harmonic goal should be measure 49 with the cadence in D major (see Ex. 3.21a).



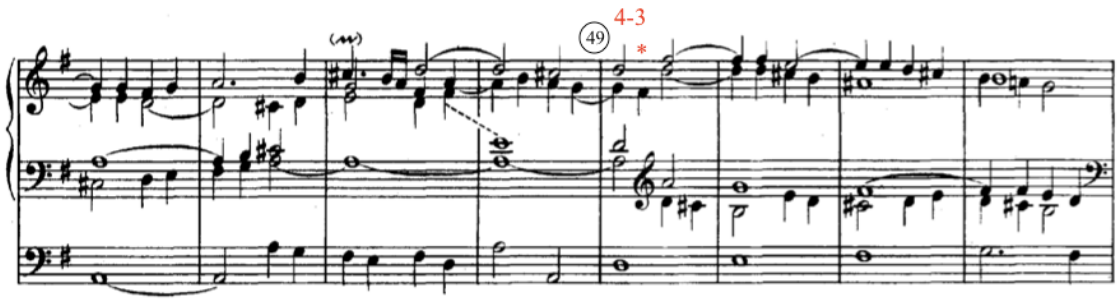
Example 3.21a.



Example 3.21b.

Example 3.21. (a): mm. 35-39: Middleground reduction, (b): mm. 35-49: linear intervallic pattern on outer voices with the imaginary continuo, which shows the polyphonic nature of the upper-voice motion supported by the progression V-I-IV-V-I.

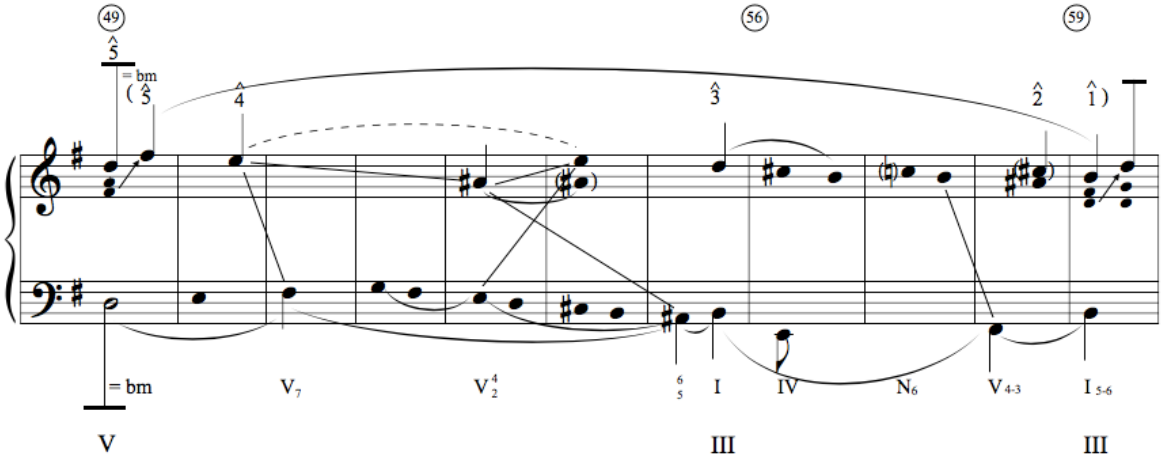
It is the strongest cadence thus far, and it is intensified by the 4-3 suspension. However, the motion keeps moving with the continuous movement in the inner voices and a consonant leap in the soprano (see Ex. 3.22). It does not settle for long before it launches immediately into a new tonal area, as if we rotated the sonic kaleidoscope to form a different shape.



Example 3.22. m. 49: in m. 49, the 4-3 suspension is marked above the staff and the leap from d^2 to $f\#^2$ is indicated by the asterisk.

A consonant skip in the soprano from d^2 to $f\#^2$ breaks the monotony of entirely stepwise motion and avoids parallel motion in outer voices. Locally, we modulate briefly to b minor (the relative minor of D major) and the linear progression $\hat{5}$-$\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$ in the upper voice supports its key area. Both $\hat{4}$ and $\hat{3}$ are prolonged but in different ways; $\hat{4}$ is elongated through a dominant prolongation from mm. 51-55 and $\hat{3}$ is embellished within the intermediate harmony. How Bach sets up the prolongation of $\hat{3}$ is interesting as he uses $\hat{3}$ (d^2) as a resolution of the seventh chord on a weak beat and ties over the barline

which becomes the seventh note of IV_7 chord. The bassline-drop from B to E articulates the arrival of IV in measure 56 (see Ex. 3.23).

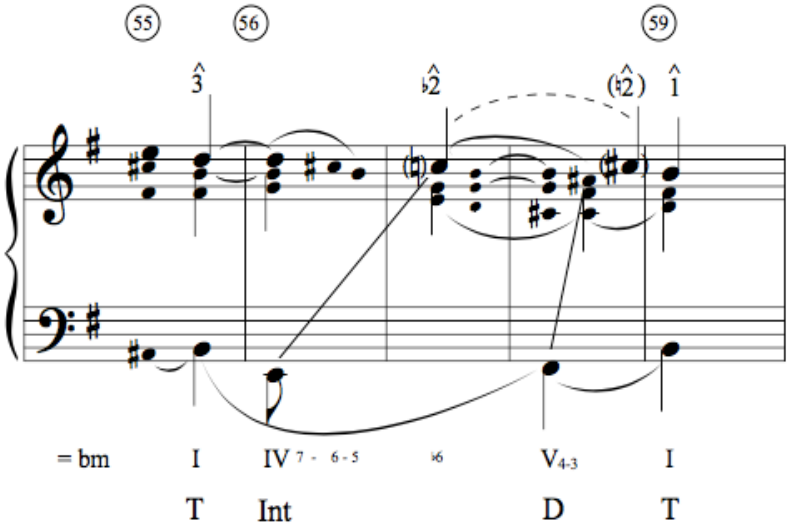


Example 3.23. mm. 49-59.

This particular prolongation of IV is interesting because of Bach's use of the Neapolitan sixth at measure 57. The intensified cadence into b minor is a result of the chromaticism when IV and the Neapolitan sixth are combined.[19] The goal of the motion from c^2♮ (♭$\hat{2}$) is the leading tone a^1#. The diminished third is filled in with a passing tone B supported by the cadential 6/4. The natural connection between d^2 and b^1 would be c^2# which is implied over a V_7 chord. c^1# appears in tenor range in measure 58 (in essence, ♭$\hat{2}$ is

[19] This analysis is similar to one used by Cadwallader and Gagné to explain how the intermediate Neapolitan leads to V-I of the cadence. See Example 6.19b in Cadwallader and Gagné, *Analysis of Tonal Music*, 147-150.

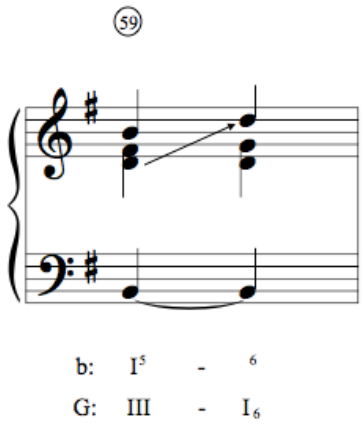
"corrected" to ♮$\hat{2}$ over V). c^1♮ is not a part of the fundamental line, but rather a modal substitution of the diatonic $\hat{2}$ (see Ex. 3.24).



Example 3.24. mm. 55-59, middleground and imaginary continuo reduction.

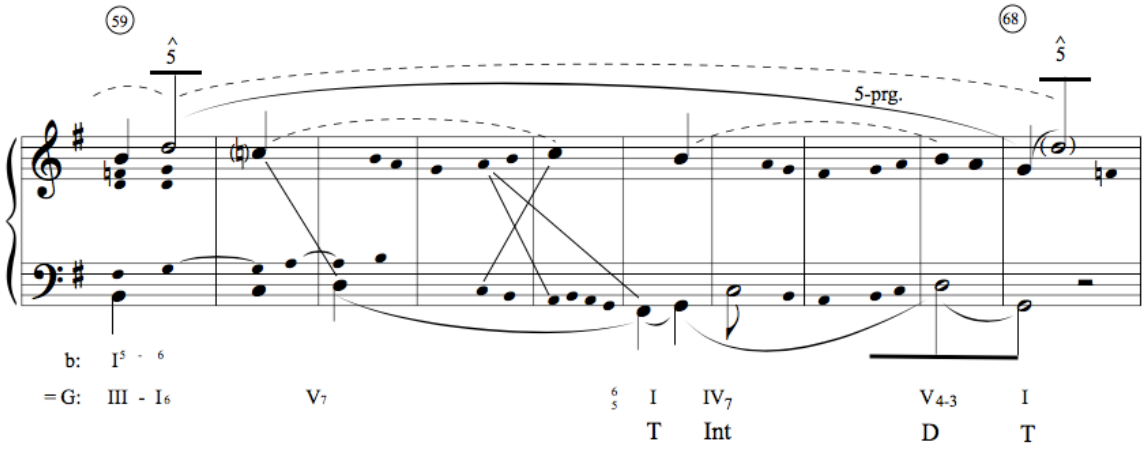
The b minor cadence in measure 59 is weakened even more than the one in measure 49. It is an imperfect cadence, and the modulation back to G major happens at the cadence through a transformation of the I chord in b minor to a I_6 chord in G major over a common bass note "B." The 5-6 sequence is continued for several measures that follow (see Ex. 3.25).[20]

[20] On *5-6 technique*, Cadwallader and Gagné write "Such a motion over a chord in 5/3 position to one in 6/3 position over a common bass note (or, in figured bass terms, simply "5-6") is very common and is called the *5-6 technique*." (56).



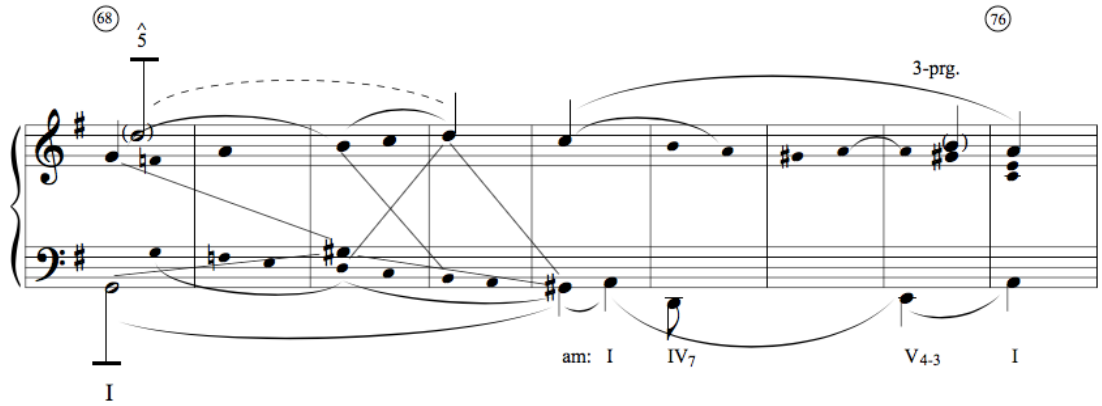
Example 3.25. m. 59, transformation of III.

The progression in mm. 49-59 is similar to the one in mm. 59-68 because both of them modulate by third relationship from the previous key area and both are supported by a linear progression of a fifth on the top voice. There are, however, subtle yet significant differences, such as how the transitions/modulations from the previous key area to the new key happen and how the fifth progression is supported in the foreground level. The upper voice unfolds a fifth at the foreground – from d^2 to g^1 in mm. 59-68. At a deeper level, we imply that scale degree $\hat{5}$ in G major, d^2, is still the governing tone over I in measure 68. The foreground fifth represents motion into an inner voice that supports the modulation back to G major. A larger harmonic structure has closure in measure 68 as we are back to the home key, G major. The cadence is destabilized immediately with continuous motion in the inner voice by immediately lowering f^1# to f^1♮ (see Ex. 3.26).



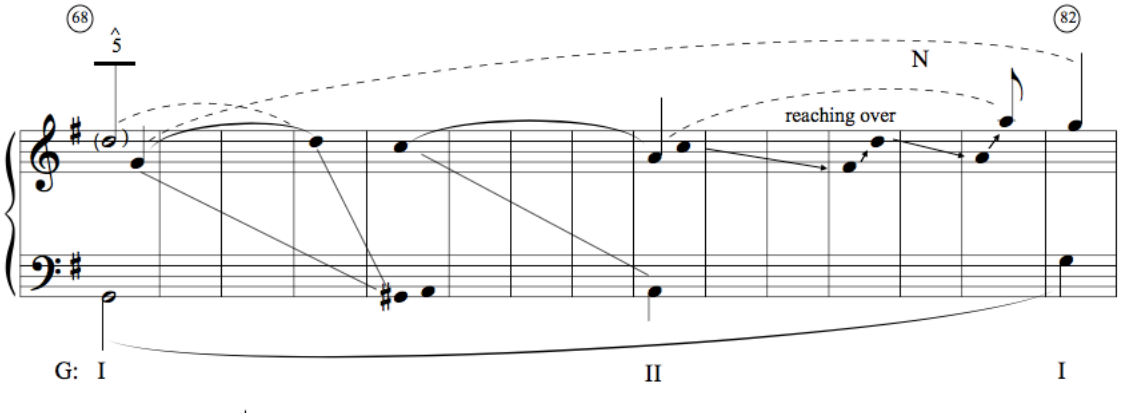
Example 3.26. mm. 59-68.

The bass note leaps an octave higher in measure 68 to prepare contrary motion in outer voices. The contrary motion brings the soprano line back to d^2 while the bass motion is elaborated with passing tones that connect g to G#. This motion leads the modulation from G major to a minor. A cadential progression in a minor is completed in measure 76, supported by the third-progression in a minor in the top voice.



Example 3.27. mm. 68-76.

The elaboration of the upper voice register change is achieved by the technique of *reaching over*[21] in mm. 76-81 (see Ex. 3.28). The leaps (chordal skips) here result from the transfer of inner-voice tones to a higher register; these tones then move down by step to the next tone of the underlying harmony. As seen in Ex. 3.26, the elongation of A (a^1-a^2 by *reaching over*) is considered a neighboring tone of g^1 in measure 68 and to g^2 in measure 82. By changing the register, it also avoids parallel octaves.



Example 3.28. mm. 68-82.

Still the governing tone in the main line is $\hat{5}$ here until it moves to e^2 at the cadence in measure 87, where the prolonged third-progression line g^2-$f\#^2$-e^2 reaches its conclusion.

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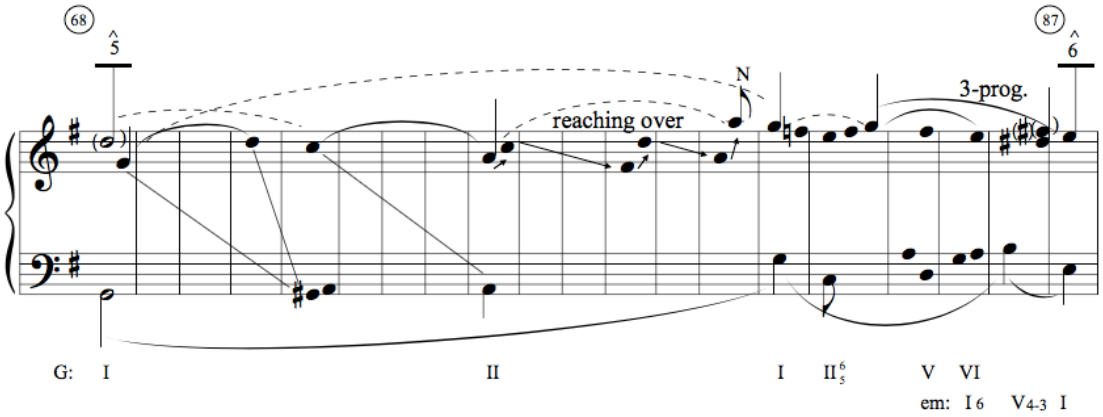
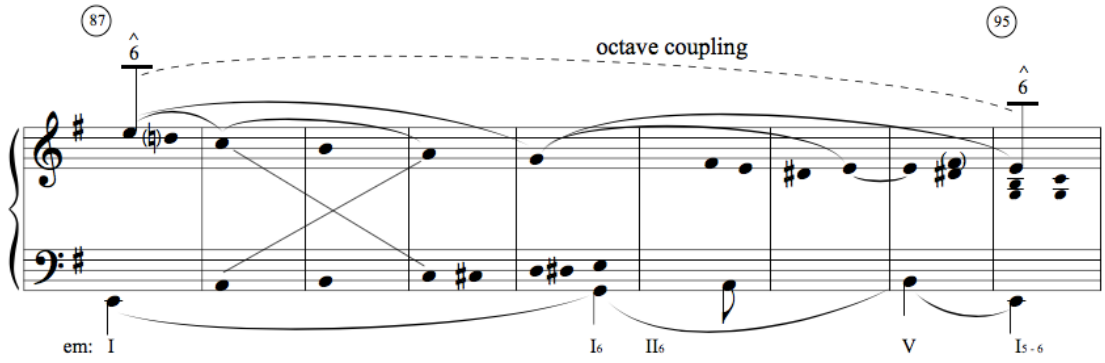
[21] Cadwallader and Gagné, *Analysis of Tonal Music,* 143-144.
Cadwallader and Gagné refer to an editorial commentary in the English translation of *Free Composition,* writing "Ernst Oster writes that *Uebergreifen* means literally reaching over, or across the top voice, in order to get hold of the following higher notes," and also summarize that "In general, reaching over is a means of elaborating a broader rising motion through a melodic pattern involving an upward leap followed by a descending step."

Another auxiliary cadence (I_6-IV-V_{4-3}-I) takes place here strengthening the modulation to e minor (see Ex. 3.29).



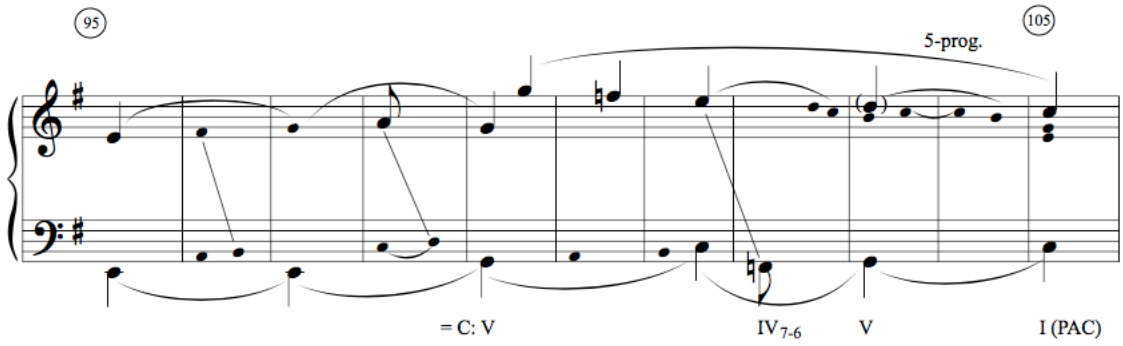
Example 3.29. mm. 68-87.

In measure 87, continuous inner voice movement links the cadence to an octave coupling in measure 95 consisting of notes of an e minor descending melodic scale, reinforcing the key area. Another authentic cadence occurs in measure 95 that serves as harmonic closure in e minor (see Ex. 3.30).



Example 3.30. mm. 87-95.

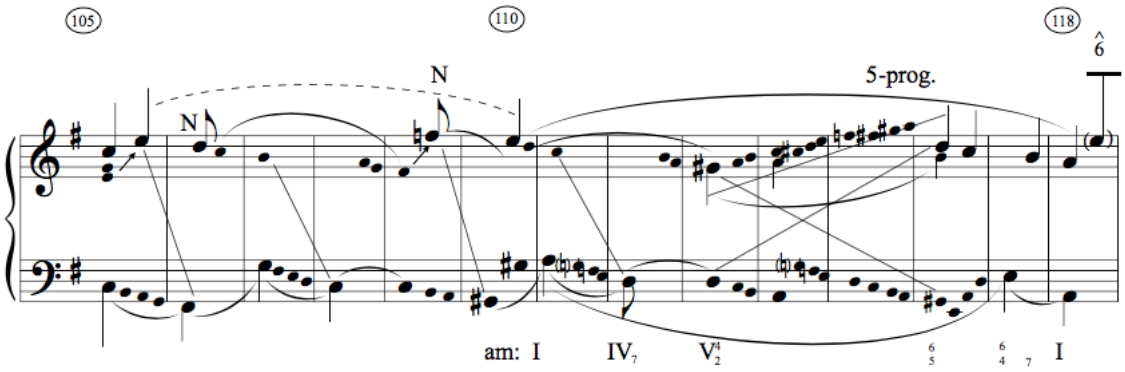
The e minor cadence moves to another key area right away, thus weakening the harmonic closure. A rare parallel motion connects e minor to the dominant of C major in mm. 95-99, although a neighboring tone, a^1, breaks up parallel octaves. Still the governing tone is e^2, yet an octave leap from g^1 to g^2 articulates a local fifth-progression in C major, at the same time it opens up space between voices while allowing the upper voice to descend gradually (see Ex. 3.31).



Example 3.31. mm. 95-105.

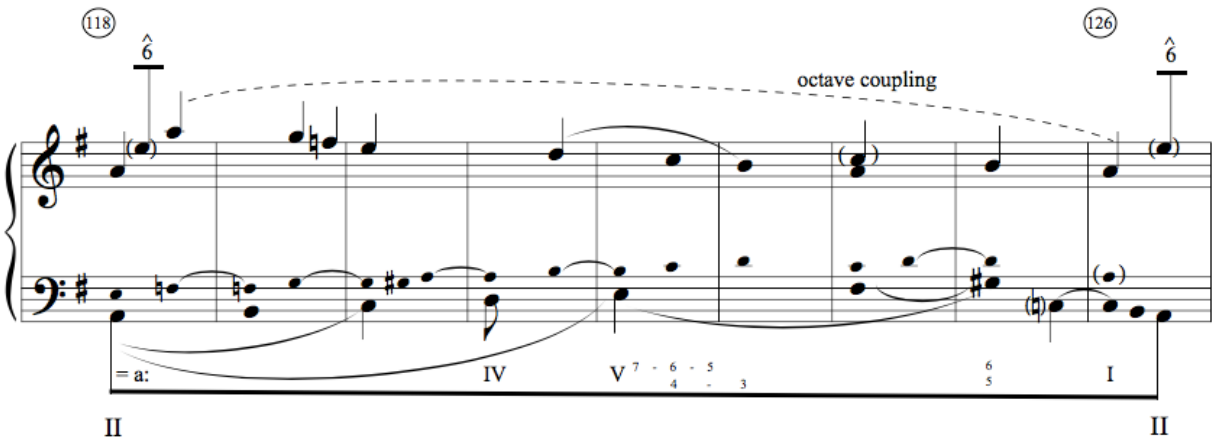
Consistently, the bass line provides the proper formula for authentic cadences (as in measure 95 and measure 105), but the motion of the inner voices and the restless nature of the bass line weakens the sense of closure while simultaneously strengthening the sense of harmonic drive. The upper voice leaps and reaches back to e^2 ($\hat{6}$ of the *Urlinie*), which is decorated with incomplete neighbor tones (e^2-d^2-$f\natural^2$-e^2); the fifth progression in the inner voice supports the e^2 prolongation through a modulation to a minor in mm. 110-118. The dominant prolongation in mm. 113-115 is intensified by dramatic contrary

motion spanning over an octave. The modulation to a minor is completed in measure 118 concluding with the fifth progression in the top voice (see Ex. 3.32).



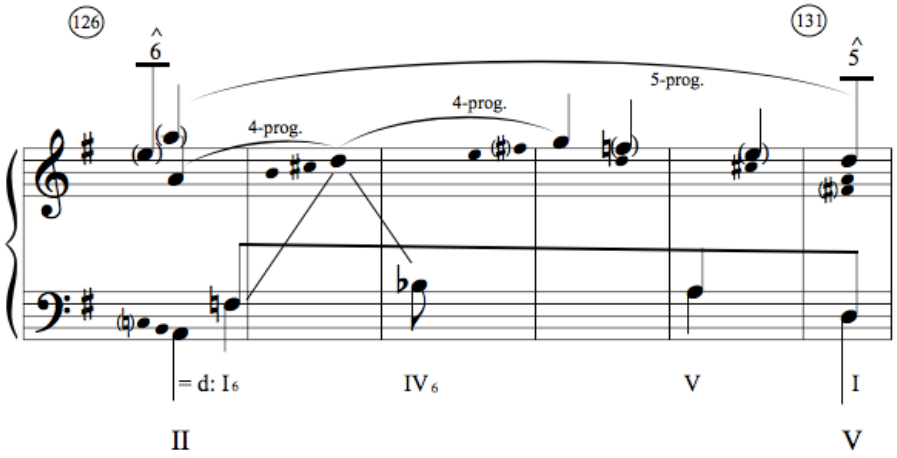
Example 3.32. mm. 105-118.

An octave leap from a^1 to a^2 prepares further contrary motion completing an octave coupling similar to the octave coupling in mm. 87-95. A descending a melodic minor scale moves in contrary motion to an ascending melodic minor scale in the bass. The a minor is prolonged by a series of rising 5-6 motions. The bass line almost spells out the entire octave, but the line turns to c♮ on I_6; it weakens the a-minor cadence in preparation for the modulation to d minor in measure 126 (see Ex. 3.33).



Example 3.33. mm. 118-126.

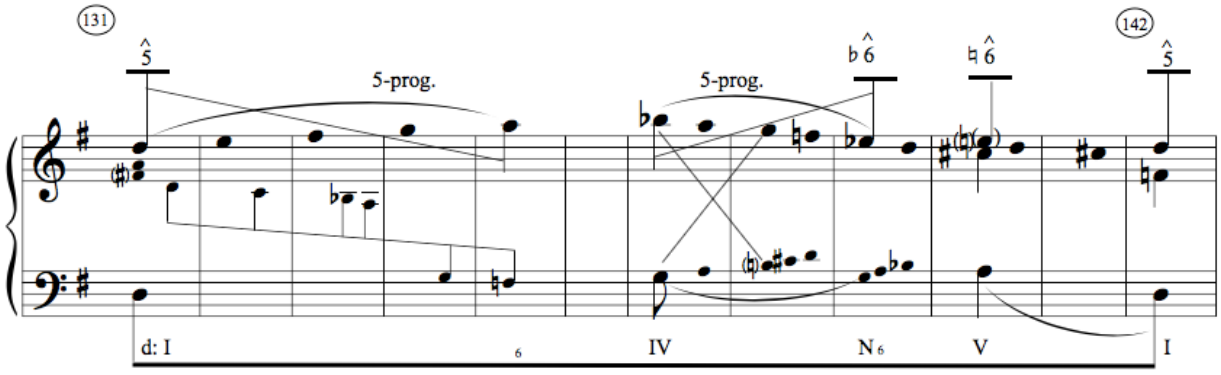
As seen in Ex. 3.34, the high a^2 is a mentally retained tone through the octave coupling and still present in that register in measure 126. The motion from the inner voice (a stepwise ascending line from a^1 to g^2) – through two fourth progressions: a^1 to d^2 and d^2 to g^2 – connects a^2 and g^2. Although they are not present, $f\sharp^2$ and e^2 can be implied as part of the fifth progression which supports the modulation to d minor. Another agent of modulation here is the auxiliary cadence (I_6-IV_6-$V_{4\text{-}3}$-I).



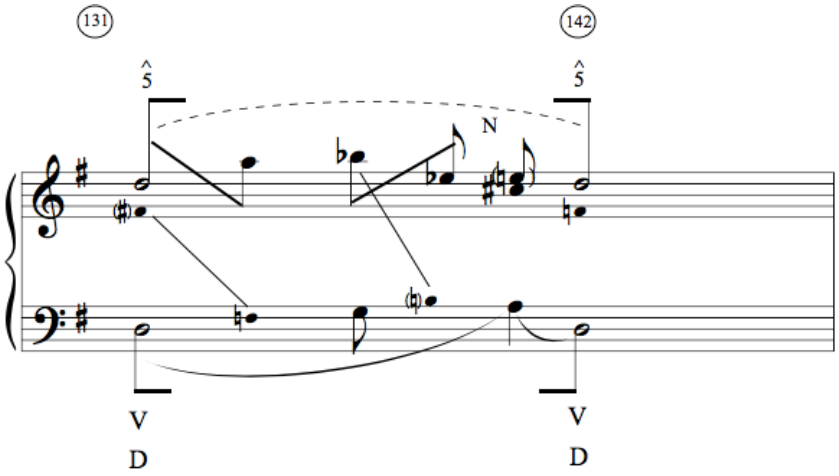
Example 3.34. mm. 126-131.

Bach plays with modal mixture and chromaticism in mm. 131-142. As he frequently crosses multiple key areas either by evaded cadences or quick modulations, the modal mixture and chromaticism are other ways of distorting clear key areas. The middle section reaches its highest point, b♭^{2}, in measure 137. Bach's use of modal mixture and the Neapolitan sixth combined with the momentarily thinner texture in four voices from measure 130 to measure 133 intensifies the climax and the cadential progression in measure 142. First, the raised third, F#, at the d minor cadence in measure 131 returns to F-natural, the proper tone in d minor, in measure 135. Also, the bass line returns in measure 134 regaining a five-voice texture and a wide two-octave span. Next, a chromaticized voice exchange prolongs the intermediate IV (indicated by the crossed lines). Finally, the Neapolitan sixth chord in measure 139 adds another dimension to the prolonged intermediate harmony. E-natural, a part of the fundamental line, appears in the tenor range and can be implied in the upper voice (see Ex. 3.35).

a.

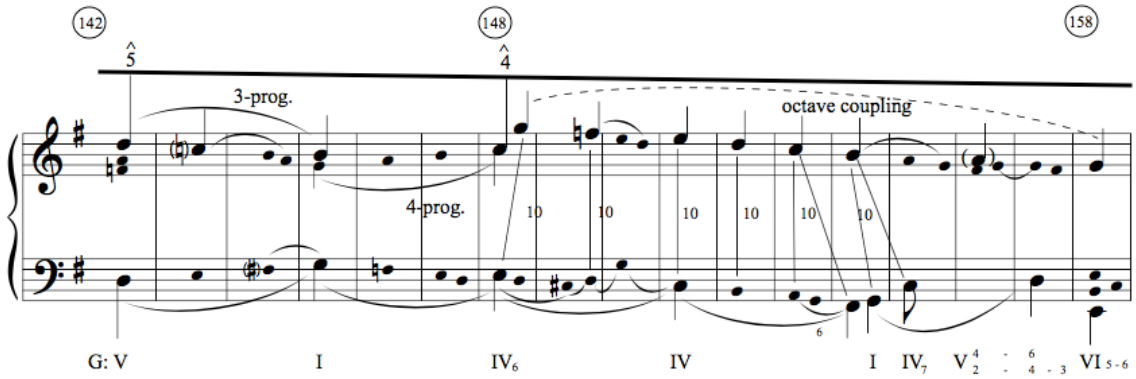


b.



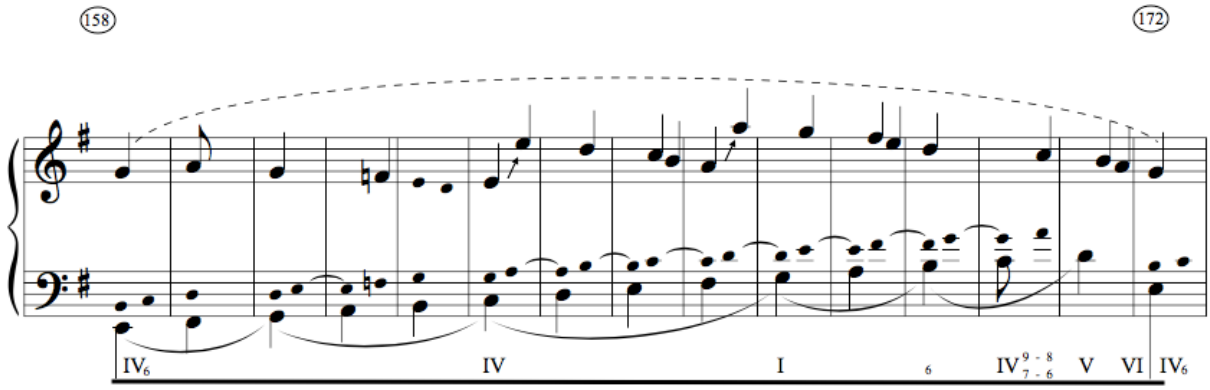
Example 3.35. mm. 131-142.

By cancelling C# and adding F#, we are back in the tonic key, G major, by measure 145. The third progression supports the modulation. The motion from the inner voice, g^1 to c^2, connects the fundamental line d^2 to c^2 on IV_6. The upper voice leap to g^2 forms with the bass the initial tenth of the linear intervallic pattern. From measure 148, the upper voice unfolds a descending octave coupling at the foreground level – from g^2 to g^1 in mm. 148-158. One may expect harmonic closure in measure 158, but the dominant moves to VI which creates a deceptive cadence. The close relationship between VI (E-G-B) and IV (C-E-G) – sharing two common pitches – plays a pivotal role in delaying the resolution. At the cadence in measure 158, V moves to VI, yet it quickly transforms to IV over a common bass note (see Ex. 3.36).



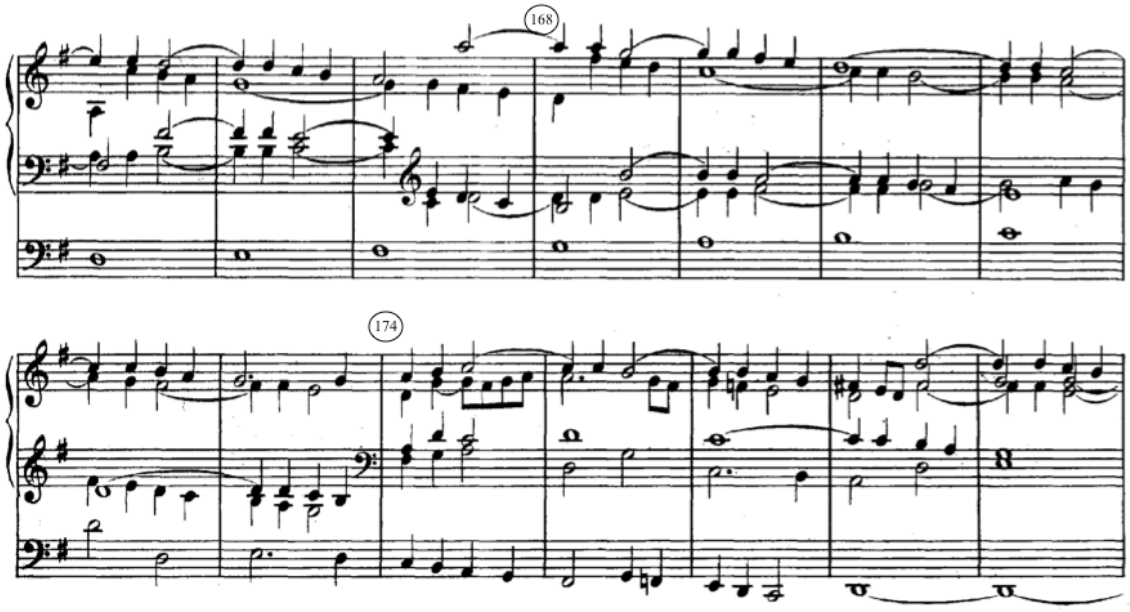
Example 3.36. mm. 142-158.

The 5-6 sequence over an almost two-octave ascending bass line begins its extensive prolongation of the intermediate harmony, IV. The monumental whole-note rising bass achieves its uninterrupted contrary motion due to two octave leaps in the manuals which allows a higher starting point to make more space available (see Ex. 3.37).

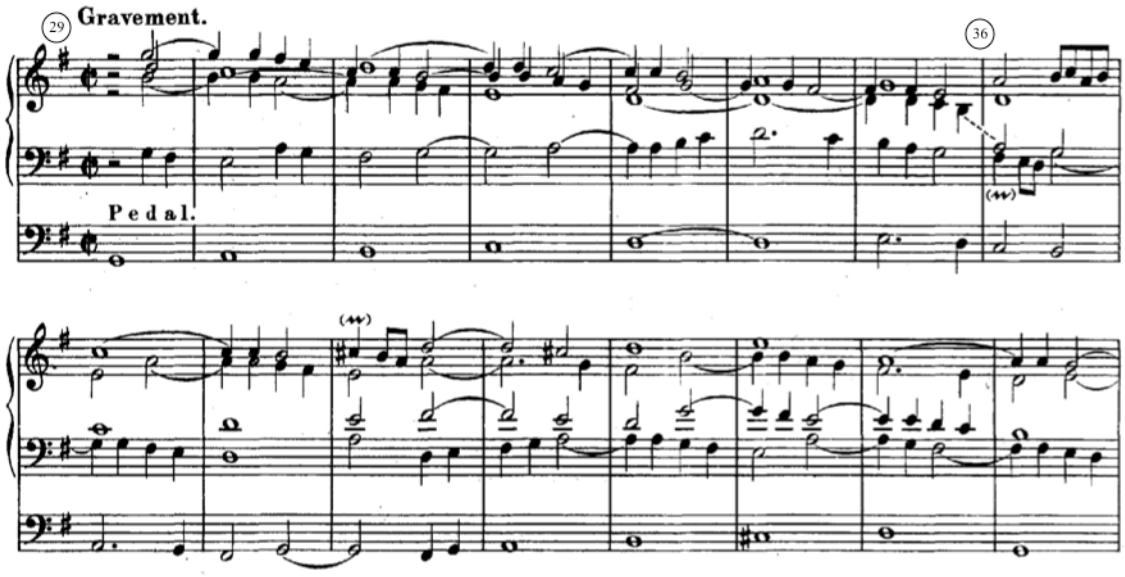


Example 3.37. mm. 158-172.

A reminiscence of the opening of the middle section occurs in measure 168 (see Ex. 3.38a). The same harmonic progression with almost exactly the same voice leading (despite an octave higher bass line) continues until the final cadential progression begins in measure 174. The harmonic rhythm through the dominant prolongation in mm. 173-174 is quicker than the previous one (mm. 36-38, Ex. 3.38b).



a. mm. 168-174.

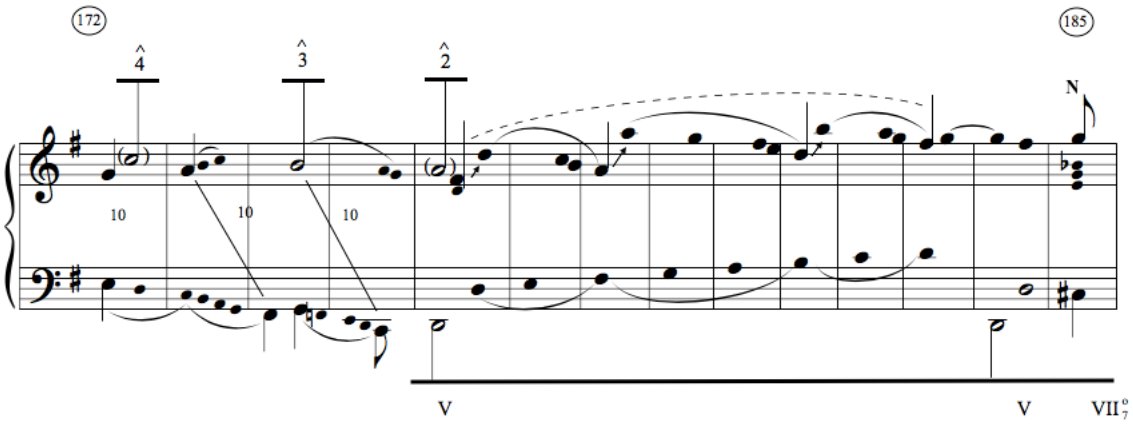


b. mm. 29-38.

Example 3.38. comparison between mm. 168-176 and mm. 29-38.

The mentally retained tone $\hat{4}$, c^2, in the upper voice is regained over V6/5. As we reach the final cadence of the section, the fundamental line of the fifth progression supports the cadence. The expectation for resolution could not be much greater as there has not been any satisfactory cadence since the perfect authentic cadence in measures 104-105 in C Major section. An extensive dominant prolongation increases anticipation of a tonic resolution, but another octave leap, through *reaching over*, moves away from the right register for the final note, $\hat{1}$ in measure 185. This registral expansion reaches g^2 which is the right note for $\hat{1}$. However, Bach provides an unexpected harmonic surprise as the dominant prolongation moves to diminished 7th chord in measure 185, an ultimate frustration at the end of a lengthy chain of harmonic twists and turns. The g^2 in measure

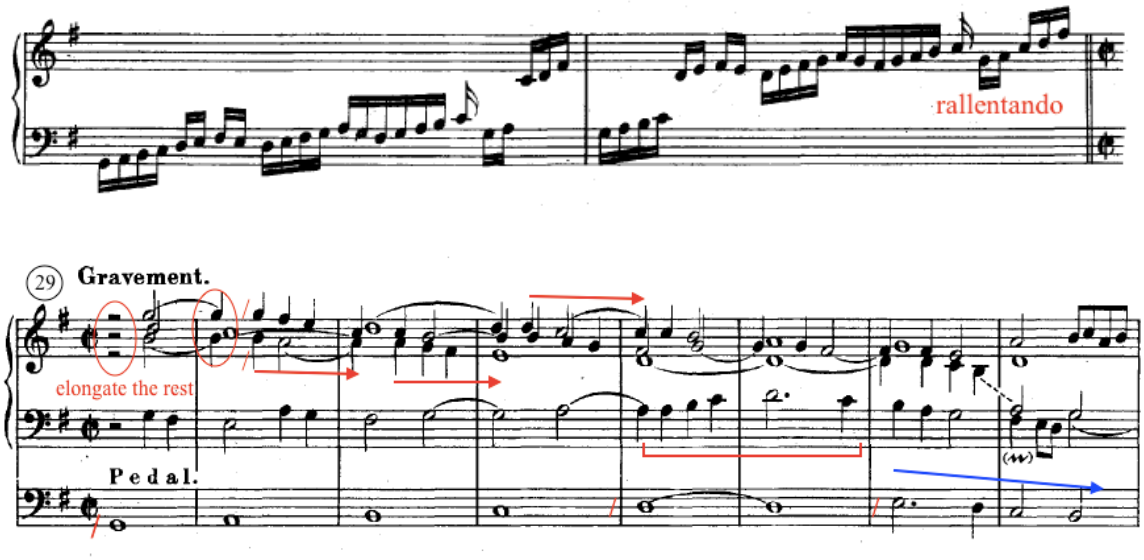
185 is not the final goal of the *Urlinie*, but rather a neighboring note for f#^{2} because of the harmony underneath. The g^2 is not supported by tonic, but rather the fully diminished 7th chord, which is the extension of the dominant (see Ex. 3.39).



Example 3.39. mm. 172-185.

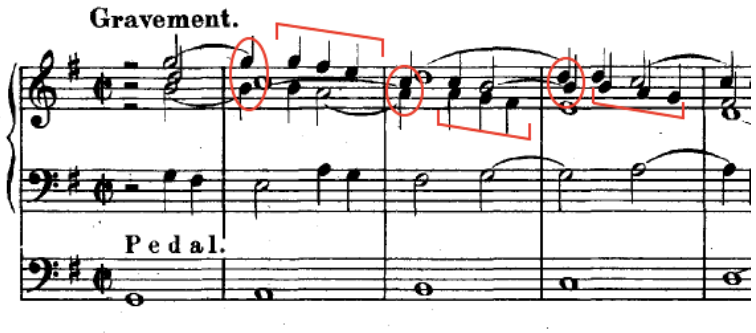
Application for Performance

The first 20 measures from the middle section, mm. 29 – 49, demonstrates how to apply reduction analysis to performance. The pedal entrance G link the transition from *Très vitement* to *gravement*. Although the registral octave is different, the bass G confirms the resolution of the dominant 7th chord spelled out in the manual passage in the previous section. Within the proportional slow down a small articulation between f#^{2} on the manual and pedal G is appropriate. Delayed by a rest, the arrival of g^2 in measure 29 can be more dramatic if we elongate the rest a little bit (see Ex. 3.40).



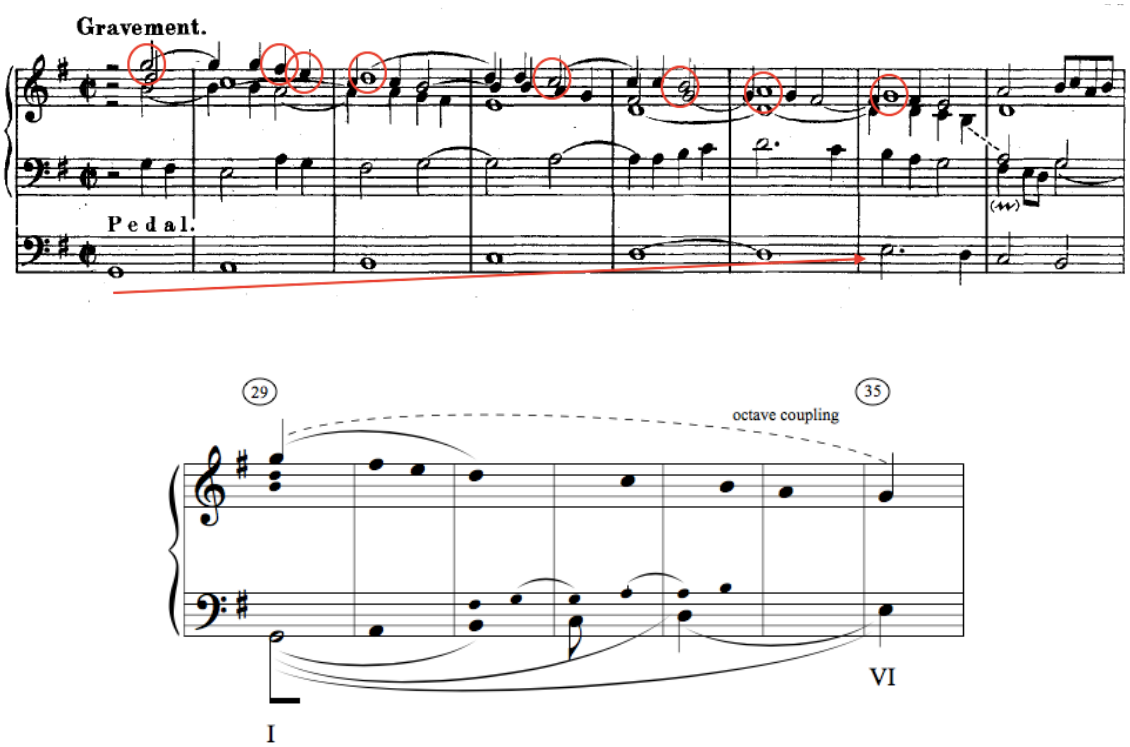
Example 3.40. mm. 28-29.

The middle section is filled with 9-8 and 7-6 suspensions that provide constant forward motion due to their rhythmic displacement and incessant search for resolution. This forward motion is enhanced by the gesture of a tied chord consisting of suspensions, followed by three quarter notes figuration. The suspensions are repeated after the tied notes. Holding the tied notes over the bar line for almost full value of the notes, or possibly even slightly longer will help hear the dissonance more effectively. If not used with caution, it can ruin the rhythmic integrity of the piece (see Ex. 3.41).



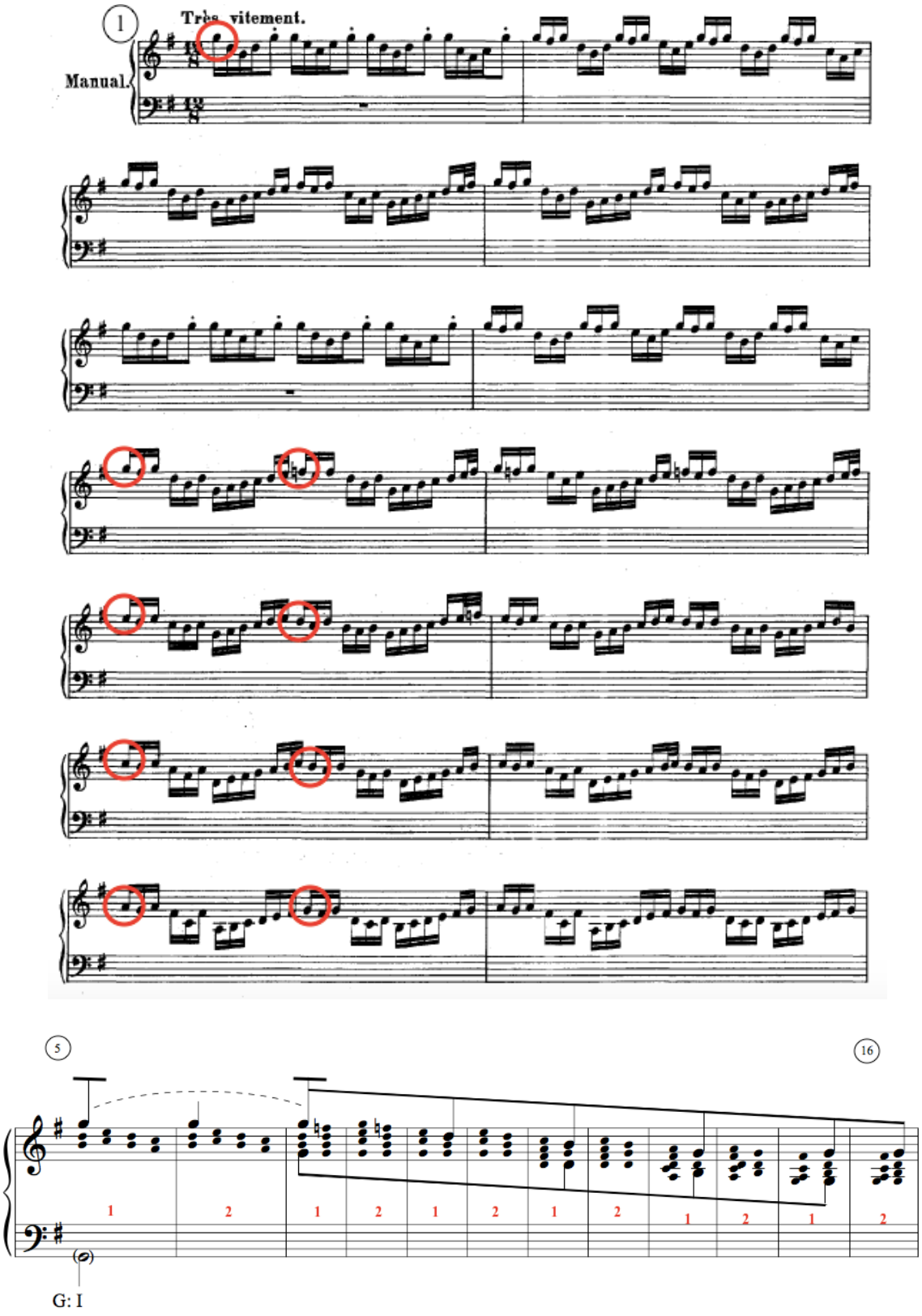
Example 3.41. mm. 29-32.

The diatonic ascending bass line is supporting the descending soprano line, which encompasses the octave coupling (see Ex. 3.42). This contrary motion suggests a direction towards the deceptive cadence in measure 35.

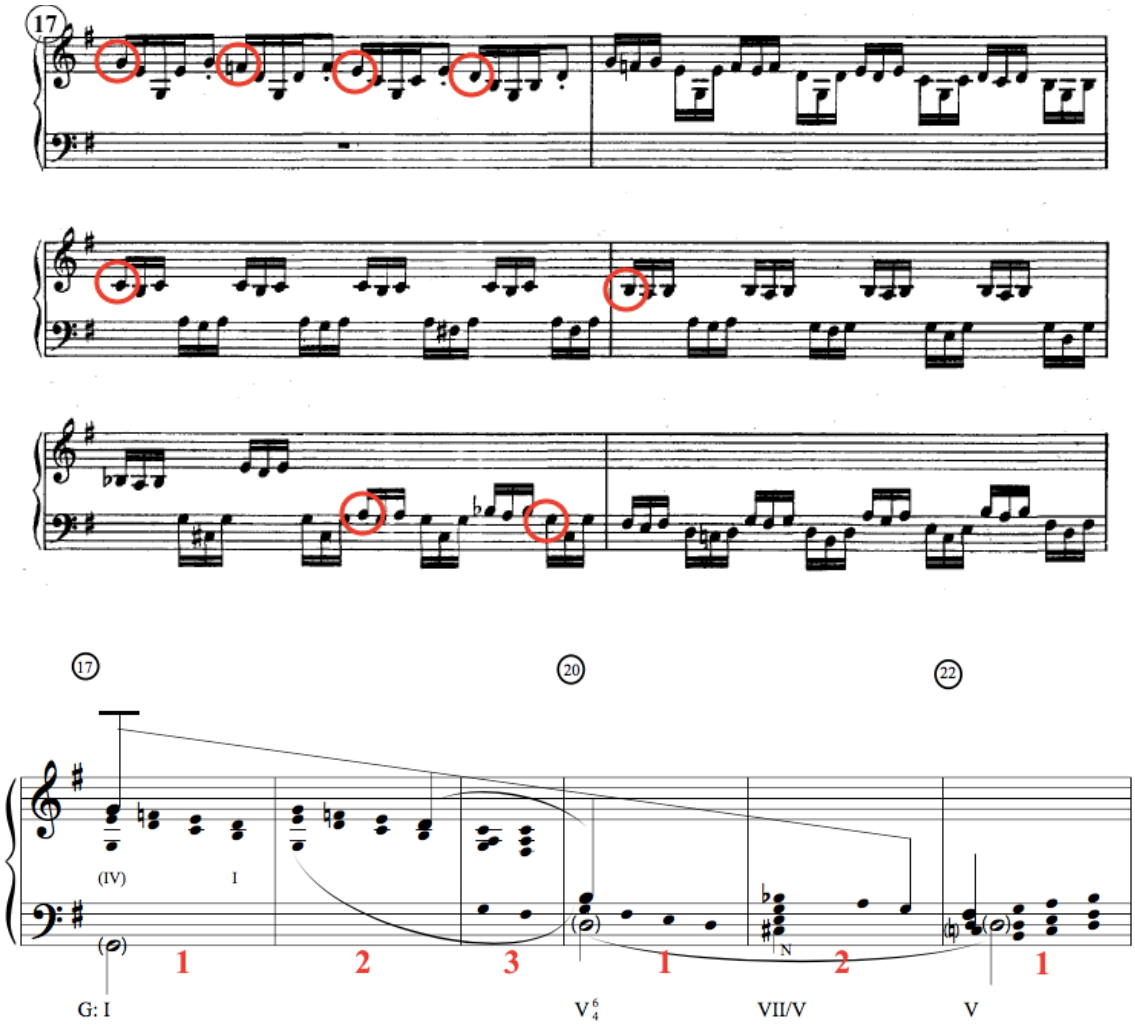


Example 3.42. mm. 29-35.

The octave coupling plays an important role in this piece. There are some excerpts of the first section in Ex. 3.43. In the first section, in mm. 1-16, we can see the whole section is playing around the scalic descent although it is not strictly G major scale because of F♮. Rather than an octave coupling, this is more appropriately seen as a G major arpeggiation, which coincides with the bottom voice as you can see in the graph. A similar pattern occurs in mm. 17-21. There are many octave couplings in the middle section and the last section.



Example 3.43a. mm. 5-16.

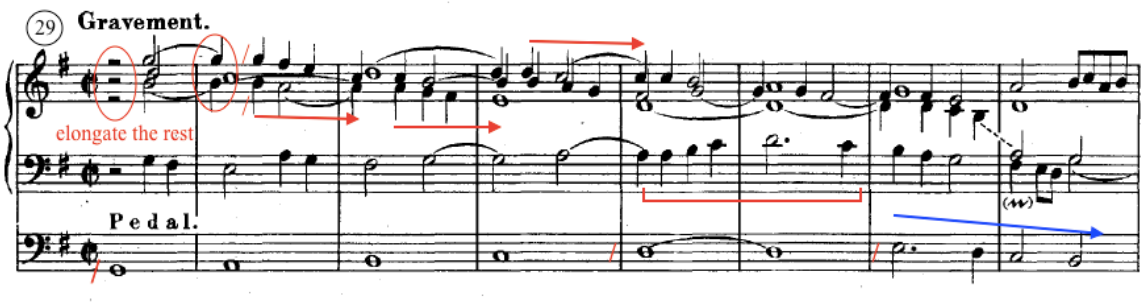


Example 3.43b. mm. 17-21.

Example 3.43. (a): mm. 5-16, and (b): mm. 17-21: octave coupling examples and middleground reduction.

As seen in Ex.3.44, in measure 33, the dominant prolongation begins. It is possible to recognize the dominant arrival by providing significant articulation in the bass moving from C to D. The downbeat of the dominant 7th chord in measure 33 needs to be held slightly longer while making mm. 33 and 34 as more of single gesture. Towards the end

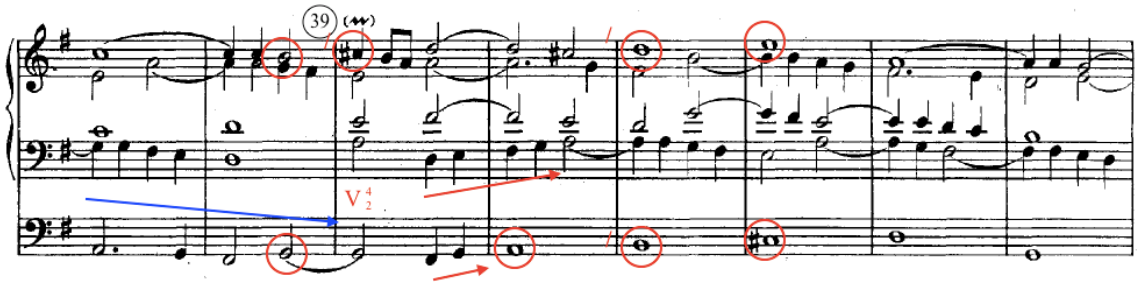
of measure 34, where we expect a cadence in measure 35, a small *rallentando* prepares for a possible first cadence in the middle section. However, the harmonic direction moves to VI instead of I. Making this harmonic motion overly dramatic is not necessary, but here it is important to highlight the progression.



Example 3.44. mm. 29-35.

The music quickly moves to a modulation to D major as the bass line moves quicker and changes its direction which naturally gives a sense of a forward motion. The dominant area in the new key starts with the V4/2 chord over a sustained bass note on G in measure 39. While putting a larger articulation before $c\#^2$ on the top line in measure 39, an uninterrupted left hand ascending line as well as pedal leading to A in measure 40 is desired. At first, it is expected to move to a cadence. Instead, there is another deceptive motion to VI in measure 41. A significant cadential gesture is not necessary, because the linear intervallic pattern continues beyond measure 41. The expansion of the dominant prolongation in mm. 39-40 should be recognized by slightly slowing down the ascending line in the left hand in measure 40. A small articulation between A and B in the bass, and a small agogic accent on d^2 in measure 41 are appropriate. The anticipation of the cadence intensifies as the harmonic goal has been delayed now twice. A chordal skip

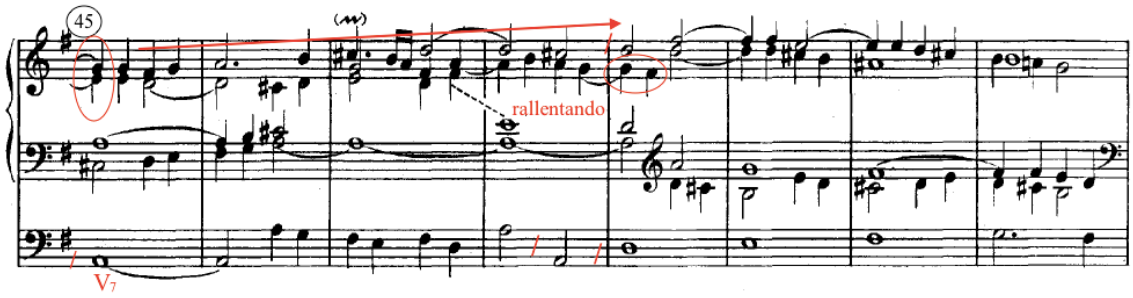
from e^2 to a^1 drops the soprano register to alto. A small articulation between these two notes needs to be placed while keeping the ascending bass line from B to d relatively close in articulation (see Ex. 3.35).



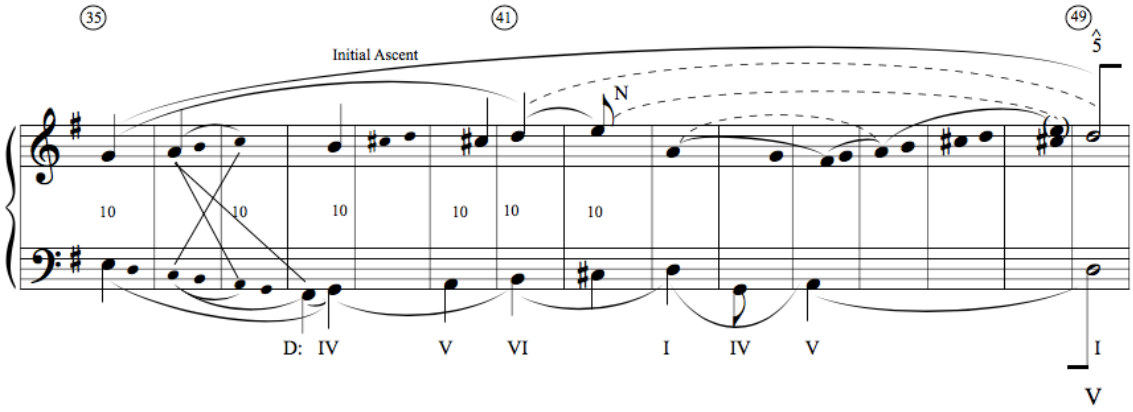
Example 3.45. mm. 39-42.

In measure 45, a four-measure dominant prolongation prepares the first perfect authentic cadence in D major. A bigger space between G to A in mm. 44 and 45 is appropriate here. Also, the downbeat in measure 45 should be held longer to recognize the arrival of the dominant prolongation. A motion from an inner voice begins its direction from measure 45. The octave leap in the bass in measure 46 prepares a descending bass line which accompanies the motion from an inner voice in contrary motion. Because we mentally retain e^2 as the primary tone from measure 42, the soprano line becomes the inner voice, and the motion from the inner voice regains a structural top-voice, d^2, in measure 49, the goal of the initial ascent. Close touch here is the best choice for highlighting this motion. As this is the first real cadence since the middle section began, its significance as a harmonic goal is substantial. A relatively large *rallentando* towards

the end of measure 48 is useful here to punctuate the octave leap as well as the leap to d in the bass clearly to indicate the first cadence. A larger agogic accent can be achieved on d^2 in measure 49 by slowing down towards the note and putting a bigger space between $c\#^2$ and d^2. Also, a strong 4-3 suspension will intensify the resolution. This cadence deserves attention as it has been delayed twice (see Ex. 3.46).



Example 3.46a.

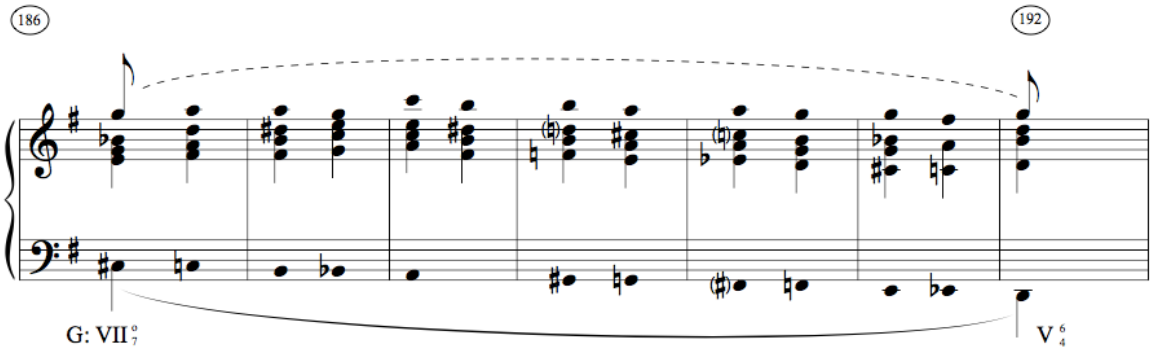


Example 3.46b.

Example 3.46. (a): mm. 45-49: (b): middleground mm. 35-49 indicating initial ascent, and the motion from an inner voice.

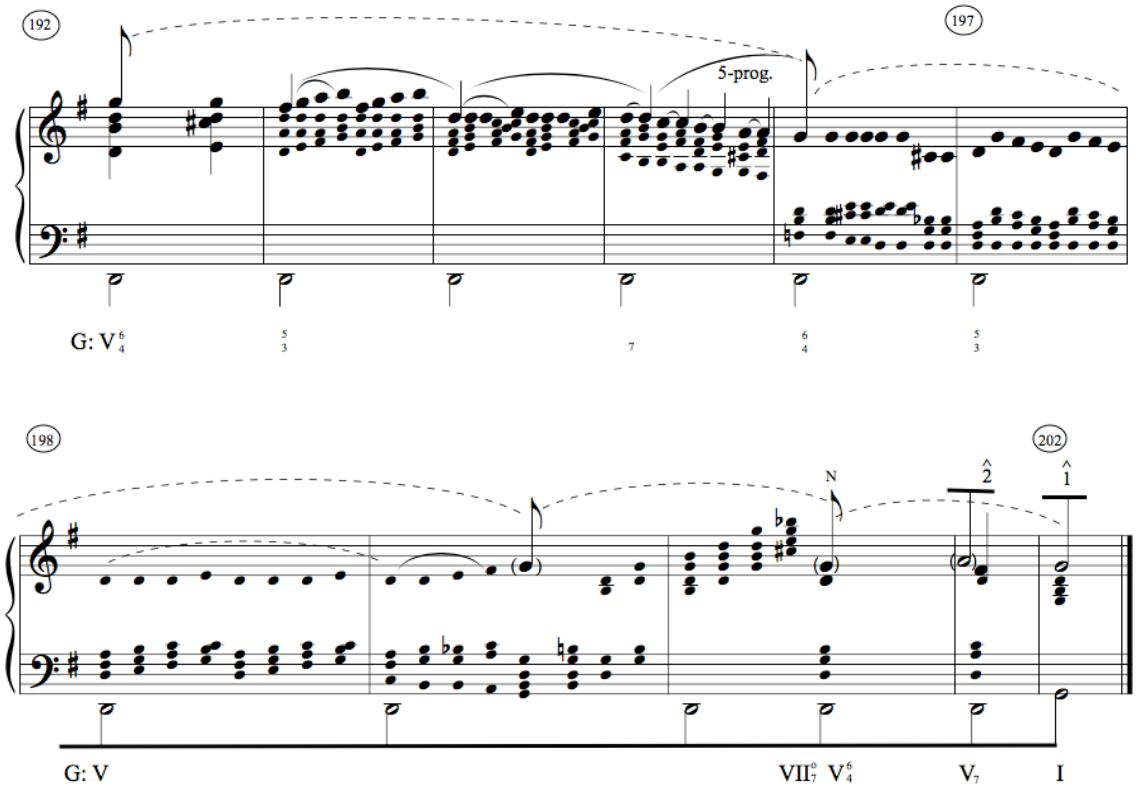
Section III: ***Lentement***

At measure 185, Bach allows the only pause in the entire piece. This clear break marks the start of the final section. Completely different from the two previous sections, the final section is built on the descending chromatic bass line connecting the diminished 7th chord, that abruptly concludes the middle section, back to dominant prolongation. Acciaccaturas intensify the chromatic bass line even more (see Ex. 3.47).



Example 3.47. mm. 186-192.

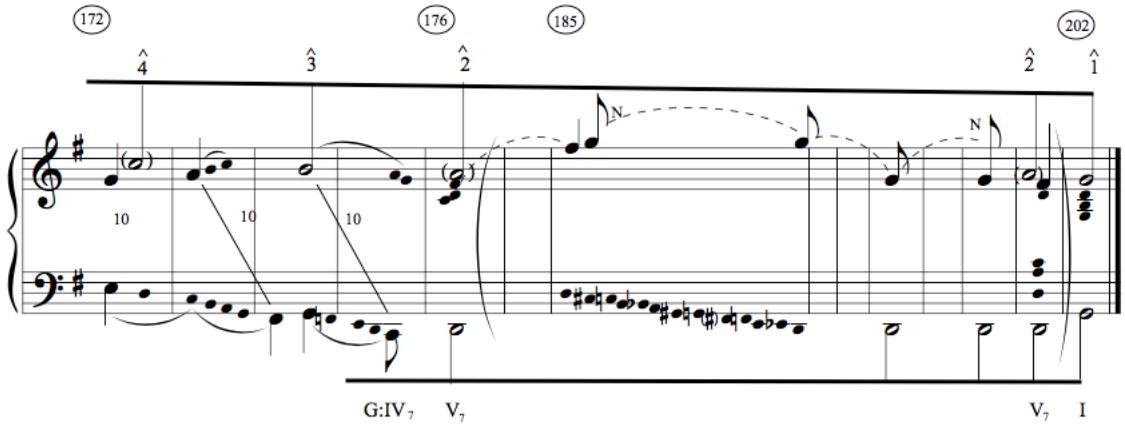
As seen in Ex. 3.48, once interrupted by the diminished chord in measure 185, we re-establish a long dominant area starting in measure 192. A nearly ten-measure long dominant prolongation, interweaving complex harmonies (muddied by continuous neighboring tones), brings the top line, g^2, down back to g^1 in measure 199. The final stretch of monophonic passage work revisits the whole range of the register from D to $b^{2}\flat$ before the final cadence.



Example 3.48. mm. 192-202.

The final cadence of the piece has long been a source of question because of the curious leap from e^2 down to $f\#^1$. But here Bach connects this final $f\#^1$ with the $f\#^1$ in measure 176 which is the same pitch that begins the dominant area of the middle section. The implied $\hat{2}$ in measure 176, which was the beginning of the dominant prolongation, was left hanging until measure 201, where the register returns to where it had been, and finally the perfect cadence is completed in measure 202. Thus, the harmonies of the concluding section, marked *Lentement* – and the sudden drop in the penultimate measure are easily explained as a virtuosic cadenza that is a twenty-seven measure long dominant

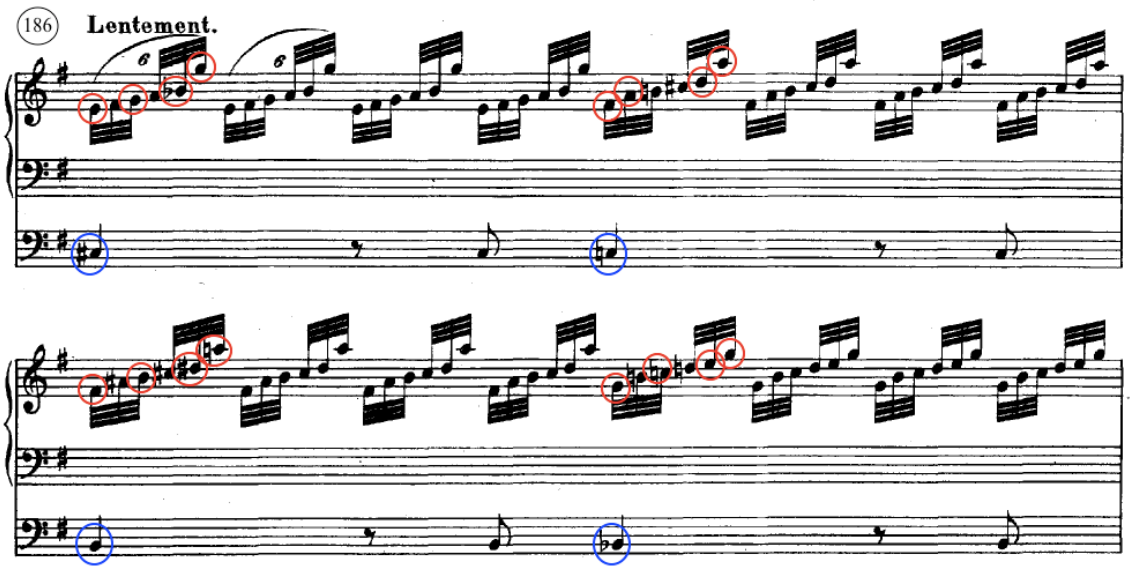
prolongation. Finally, the scale degree $\hat{1}$ in measure 202 completes the *Urlinie,* $\hat{5}$-$\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$ (see Ex. 3.49).



Example 3.49. mm. 172-202.

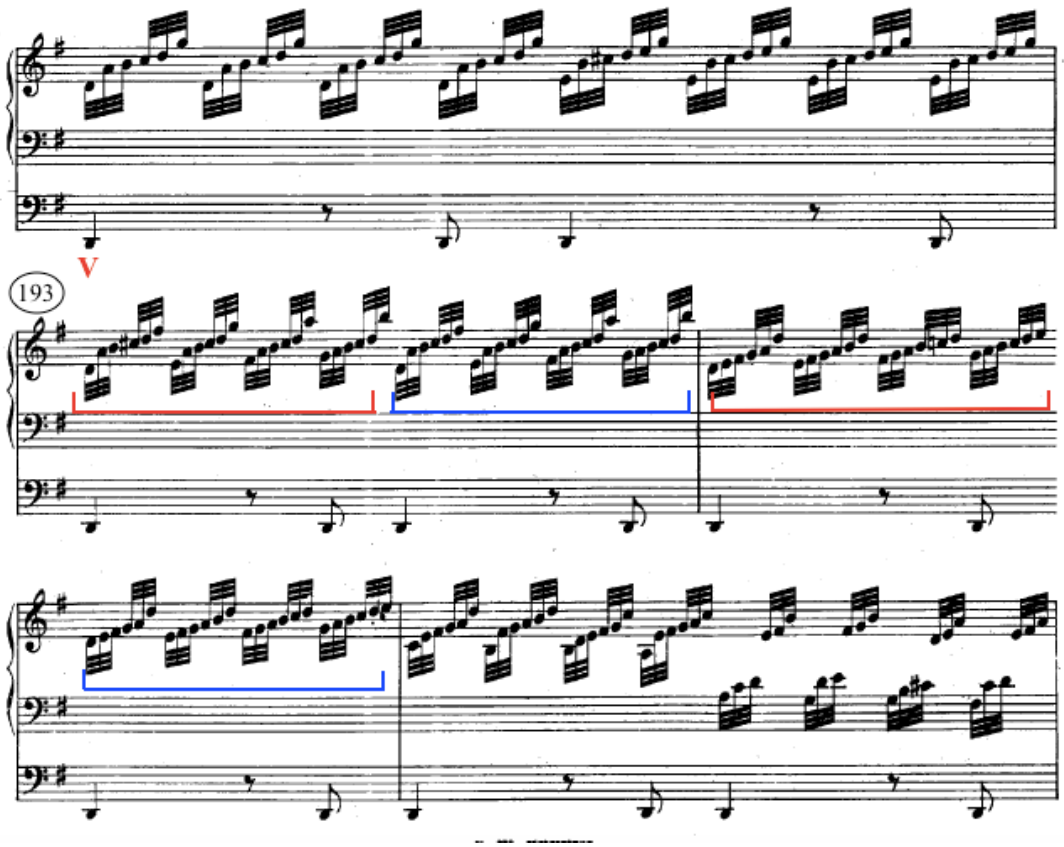
Application for Performance

The final section can be considered more as a single gesture to measure 201 where the primary tone comes back to f#[1] (the implied retaining tone is a[1]). Example 3.46 shows the harmonic outline of mm. 186-192. A chromatic descending bass line from c# to D is intensified with acciaccaturas on the manual. These acciaccaturas are played in a fast tempo, but still those chord tones can be held slightly longer as the gesture begins to help those harmonic outline audible. However, towards the end of the ascending gesture in each acciaccatura, the touch can be lighter to prevent harmonic muddiness (see Ex. 3.50).



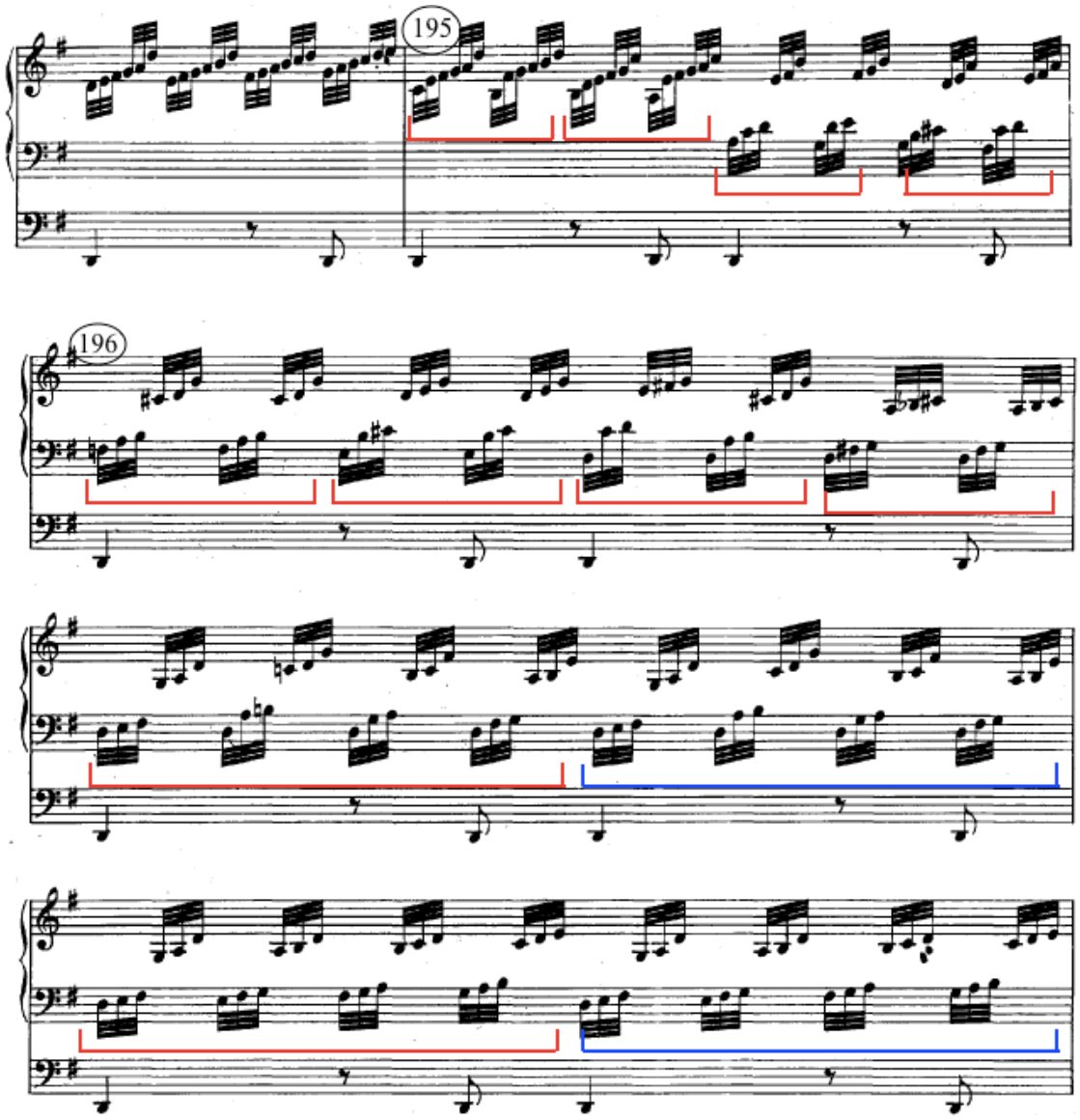
Example 3.50. mm. 186-187: indication of chord tones in acciaccaturas.

Upon the arrival of the dominant prolongation in measure 192, the pedal line no longer moves. Instead, the manual passage has passing gestures that keeps the linear motion active. In mm. 193-194, each measure repeats same harmonic structure twice. Touch can be lighter for the repeats sounding like echoes. (see Ex. 3.51).



Example 3.51. mm. 193-194.

Measures 195-196 bring the register down the octave, and mm. 197-198 are harmonically equivalent to mm. 193-194. Again, touch can be varied to bring out subtle groupings (see Ex. 3.52).



Example 3.52. mm. 195-198.

A complete score of *Pièce d'orgue* is provided in Appendix A.

The reduction analysis of the entire piece is provided in Appendix B.

CONCLUSION

If only reading the musical score were sufficient to communicate to performers, making musical decisions would not be particularly difficult. However, making music requires so much more than what is written on the page. On what can we base our musical decisions? Playing with instinct cannot be easily disregarded if one's instinct comes from long and diligent training. Even for highly trained musicians, there are times that require more than informed intuition. Here analysis can help performers' understanding and ultimately boost their confidence in performance. It is not a matter of which comes first or which is superior to the other (the analysis or the performance), but rather how beneficial it is to utilize analysis for performance. There is no such thing as one correct way of interpretation. Even with the same basic analysis, how individual performers express their interpretation varies, and that is the beauty of performing music. Musical analysis, at first, weighs various possibilities; then it focuses our thoughts and reasoning to make certain musical decisions. In this document, I have used analysis, especially reduction analysis, as a problem-solving activity, as Jonathan Dunsby describes.[1] The purpose f this document is not to discourage performers' imagination or intuition, but to use analysis as a part of practical musicianship. As Cook states, the most important thing that analysis does is what analysis leads us as performers to do.[2]

Analysis helps performers see the underlying harmonic and linear structure. Performers use rubato, dynamic changes, and other musical means to express and to

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[1] Jonathan Dunsby, "Guest Editorial: Performance and Analysis of Music," 8.
[2] Cook, "Analysing Performance and Performing Analysis," 249.

communicate, which is ultimately to bring out the underlying structure. For organists, the lack of 'dying fall' (or its inability to change dynamics), poses certain challenges to make the instrument expressive. Organists are responsible for allowing the instrument to breathe by making intentional phrases, dynamic changes by sensitive control of articulation, and agogic accents. Analysis is especially beneficial for organists to decide how to phrase, how to articulate, how to time, and how to place agogics.

Chapter 3 provides a reduction analysis of J. S. Bach's *Pièce d'orgue,* BWV 572 as a case study. It is by no means the only way of reading the piece, but it gives readers a possible reading upon which a performer can base one's musical and interpretative decisions. By analyzing, we are able to identify the underlying harmonic and linear structure of the piece. Especially for the middle section, it is extremely helpful to understand Bach's harmonic kaleidoscope. The most valuable finding was that recognizing the complete *Urlinie,* $\hat{5}\text{-}\hat{4}\text{-}\hat{3}\text{-}\hat{2}\text{-}\hat{1}$, allows us to finally understand the sudden octave drop in the penultimate measure.

As Rothstein says, "Analysis, in short, helps to provide the raw material; the performer's imagination, and empathic identification with the work, must do the rest."[3] We, performers, can be self-taught by using the imaginary continuo and reduction analysis as pedagogical tools for performance studies. A comprehensive understanding of music should not limit one's imagination and freedom but rather enhance the artistry in performance, and enable it to be compelling.

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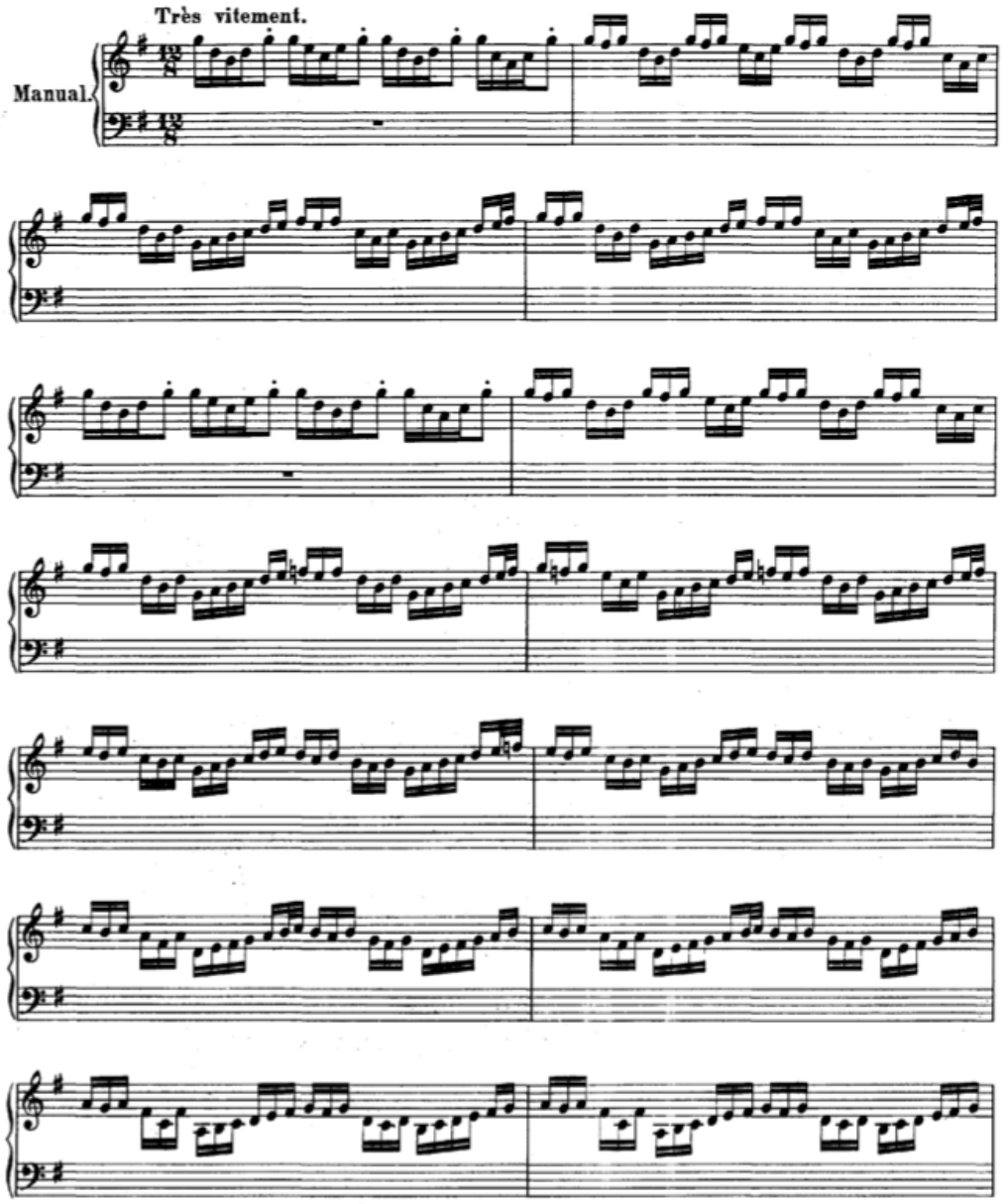
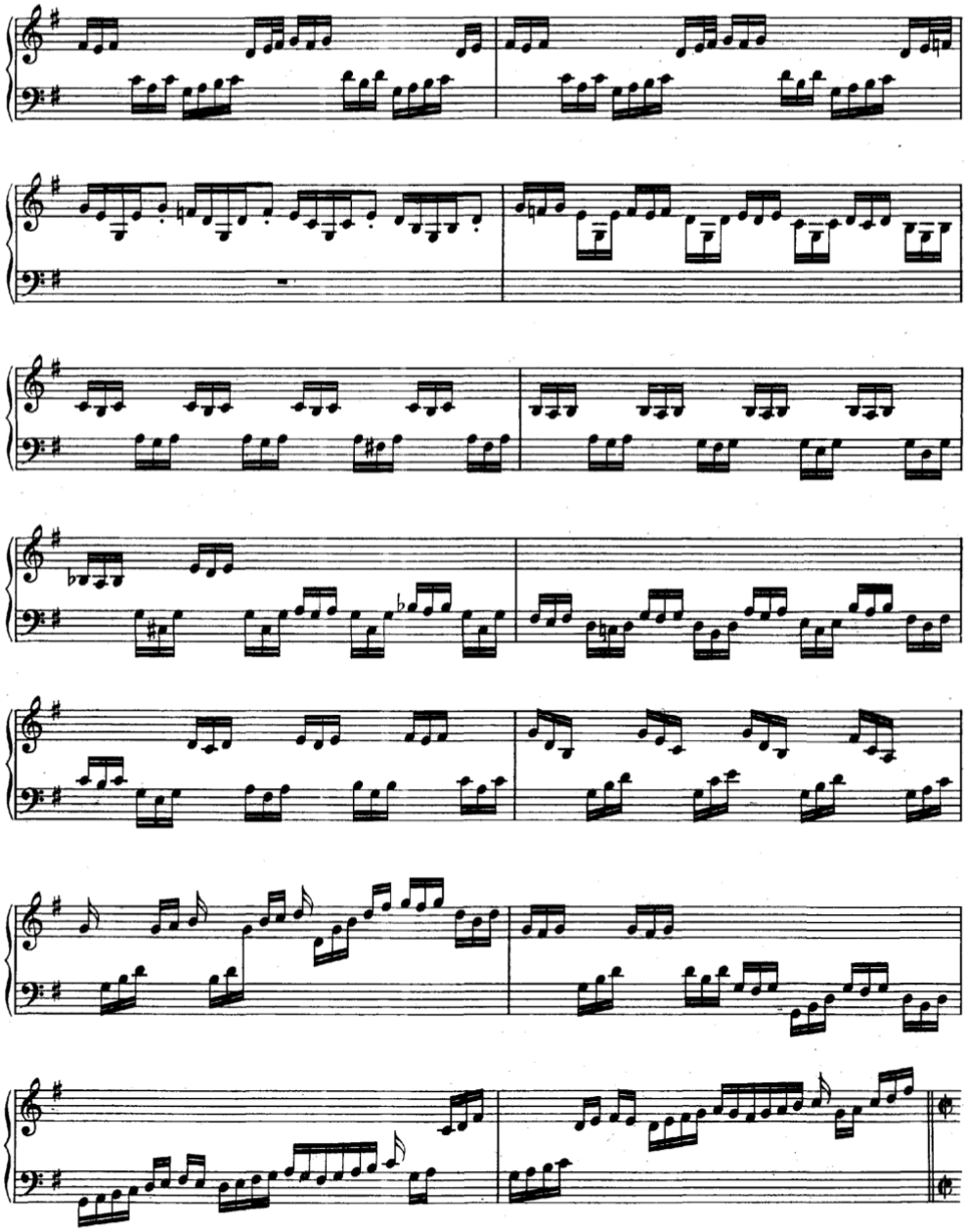
[3] Rothstein, "Analysis and the act of performance," 238.

APPENDIX A: *PIÈCE D'ORGUE*, BWV 572 BY J. S. BACH[4]

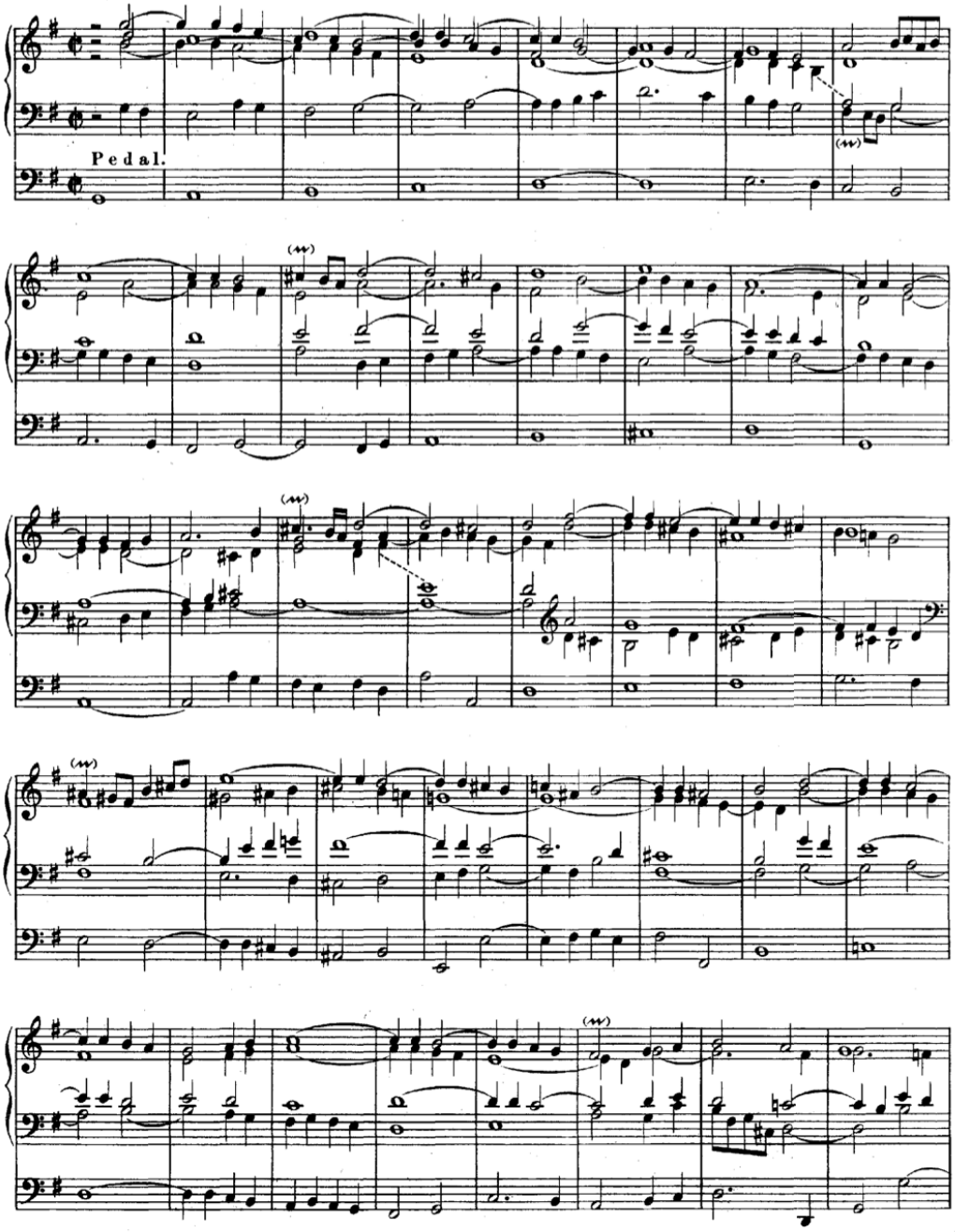


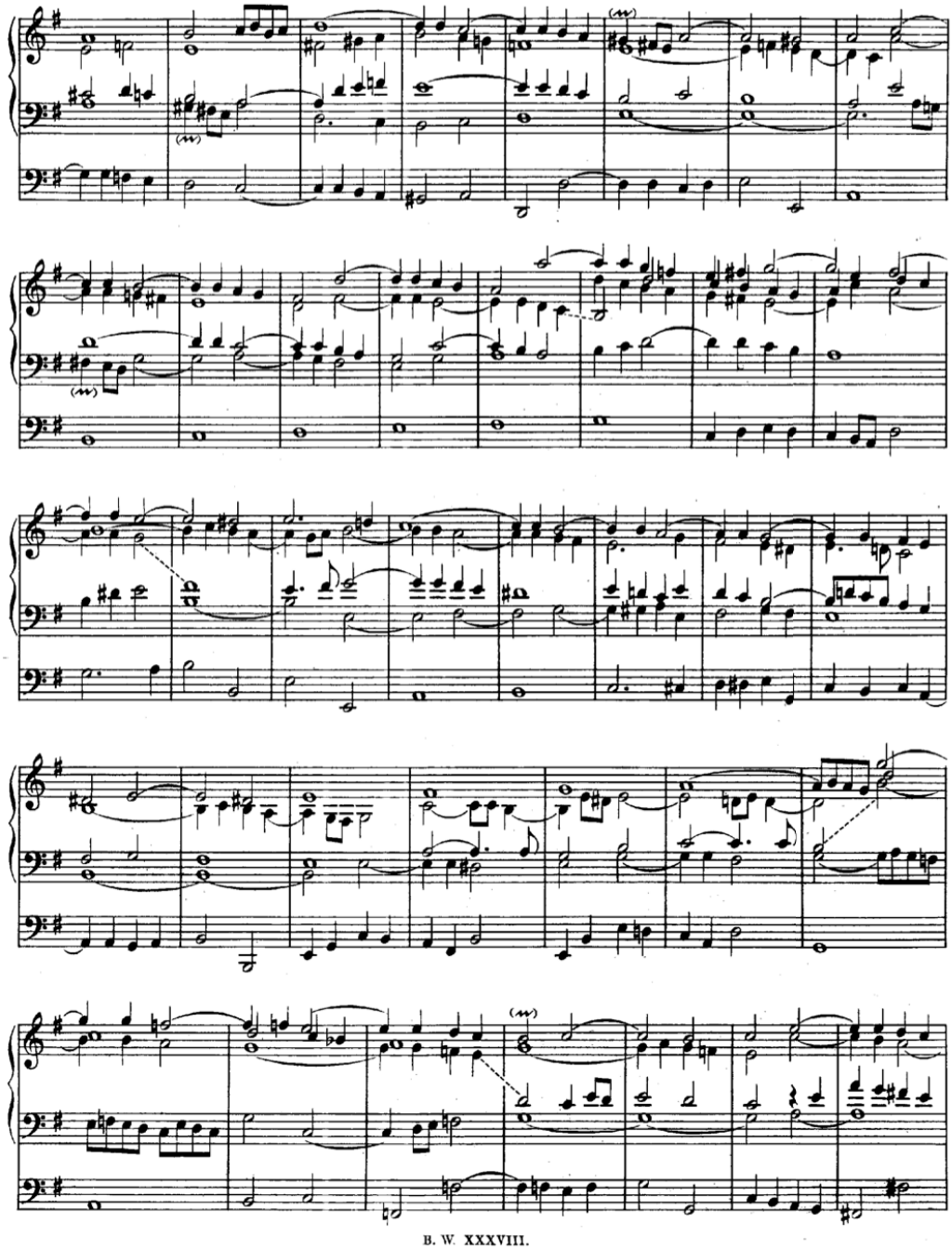
[4] Johann Sebastian Bach, *Bach-Gesellschaft Ausgabe,* ed. Ernst Naumann, Band 38 (Leipzig: Breitkopf und Härtel, 1891), 75-83.

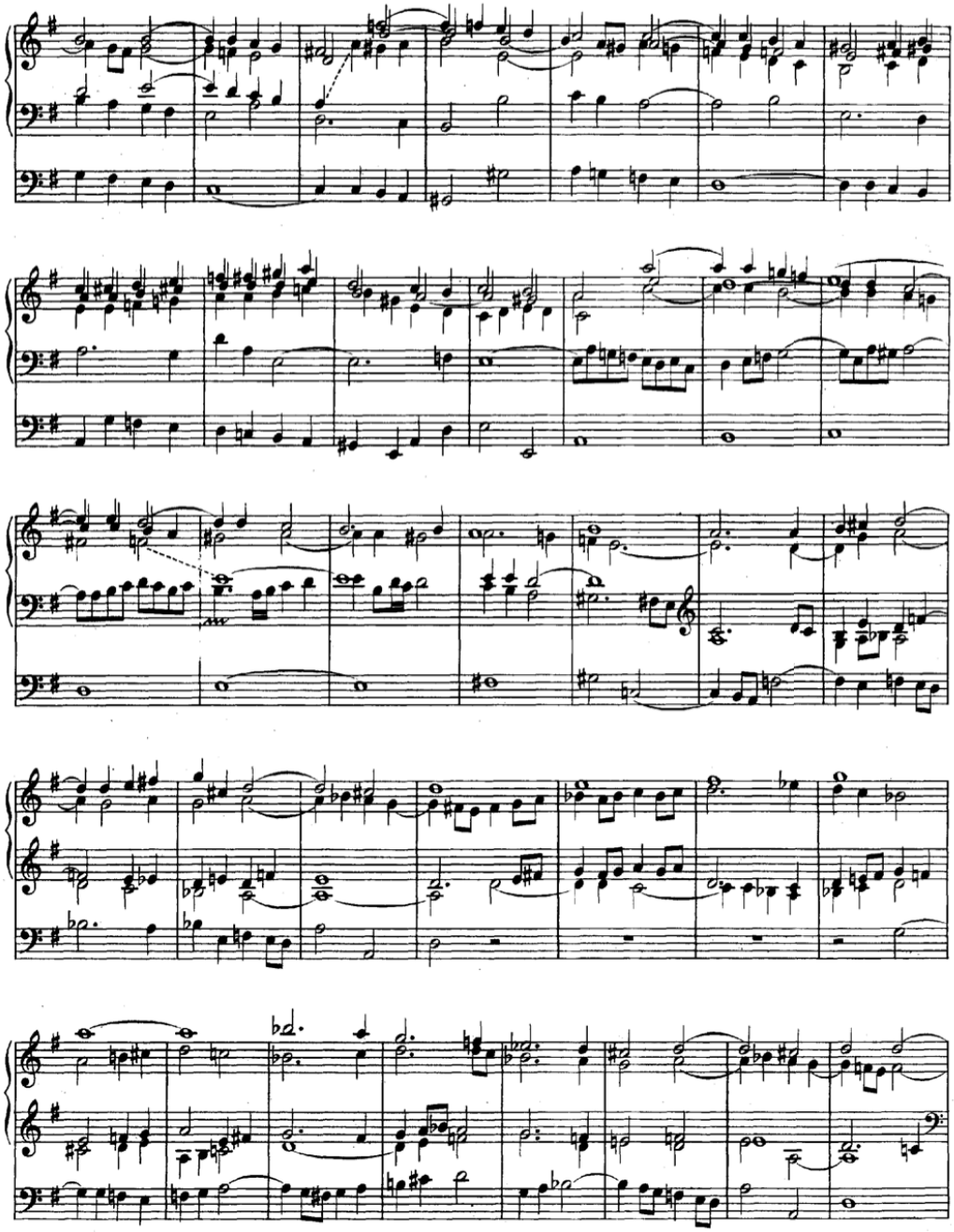


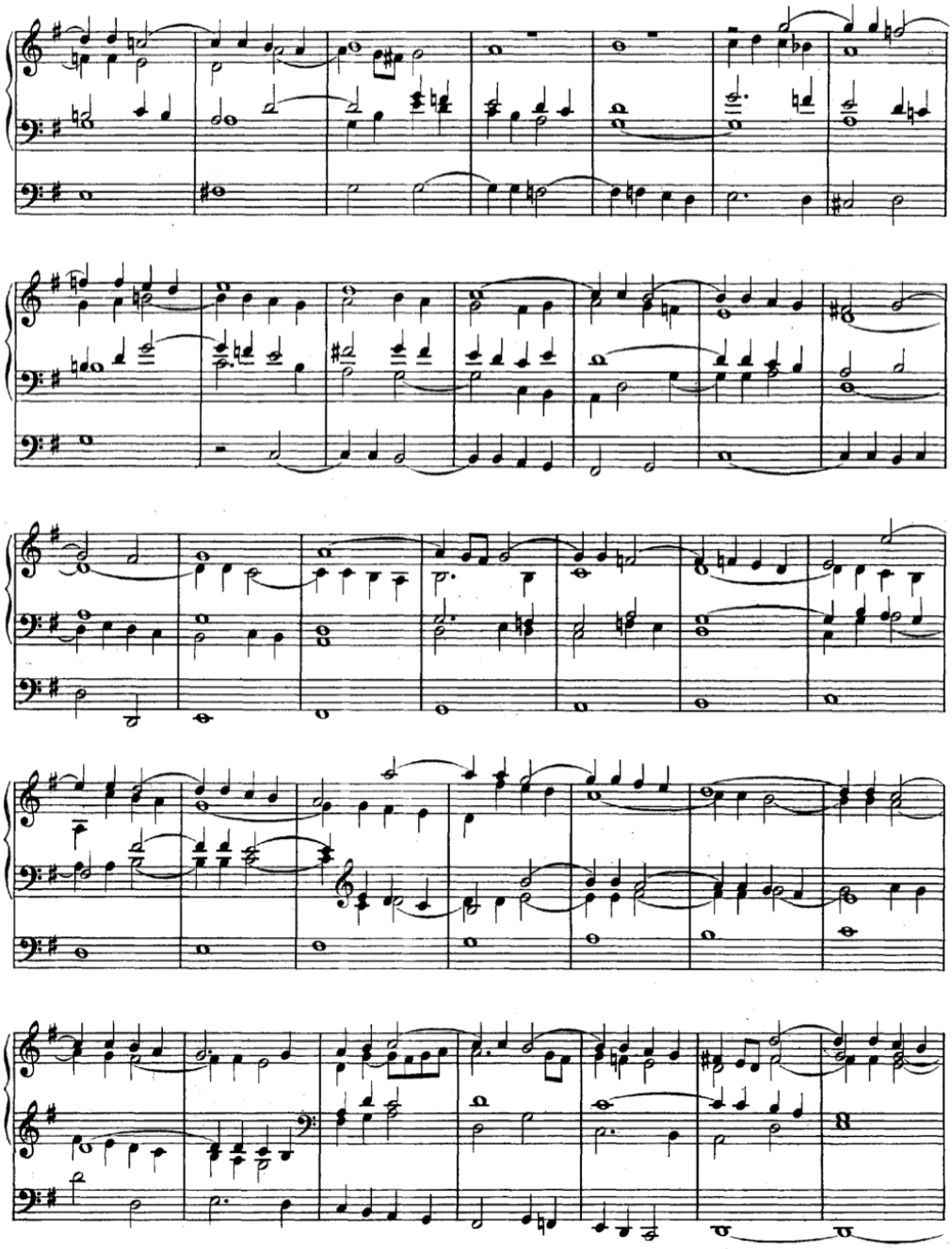
Gravement.

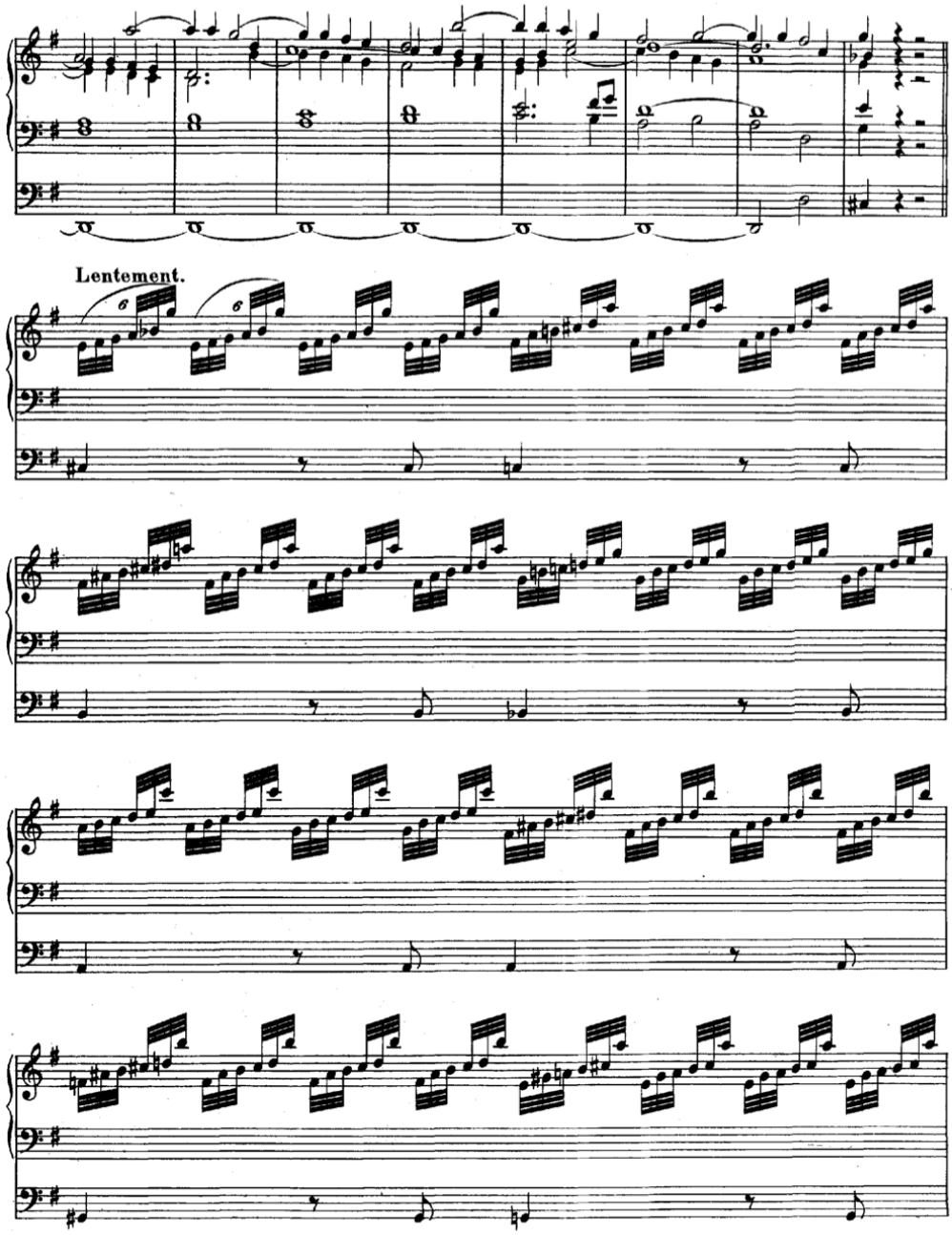
Pedal.

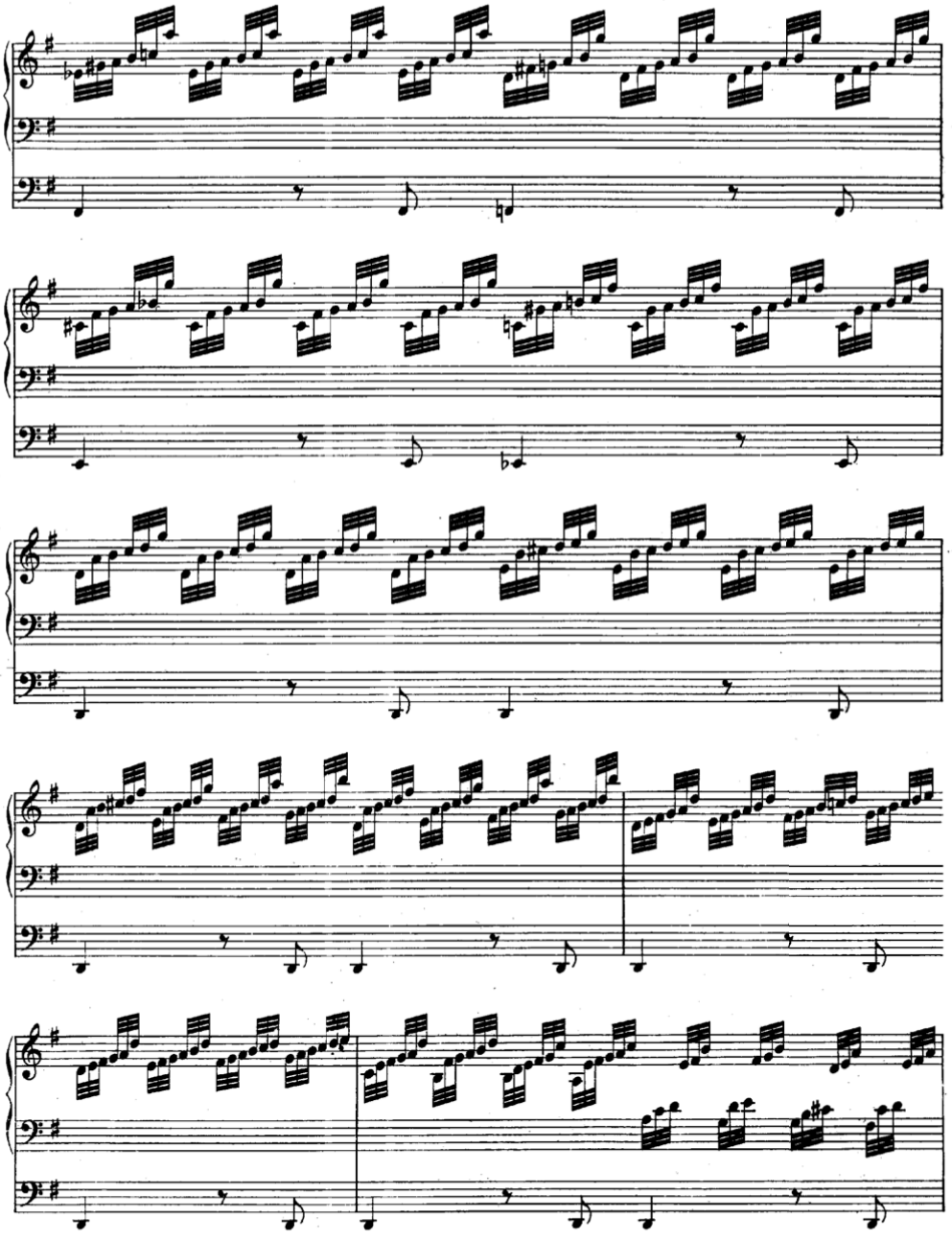


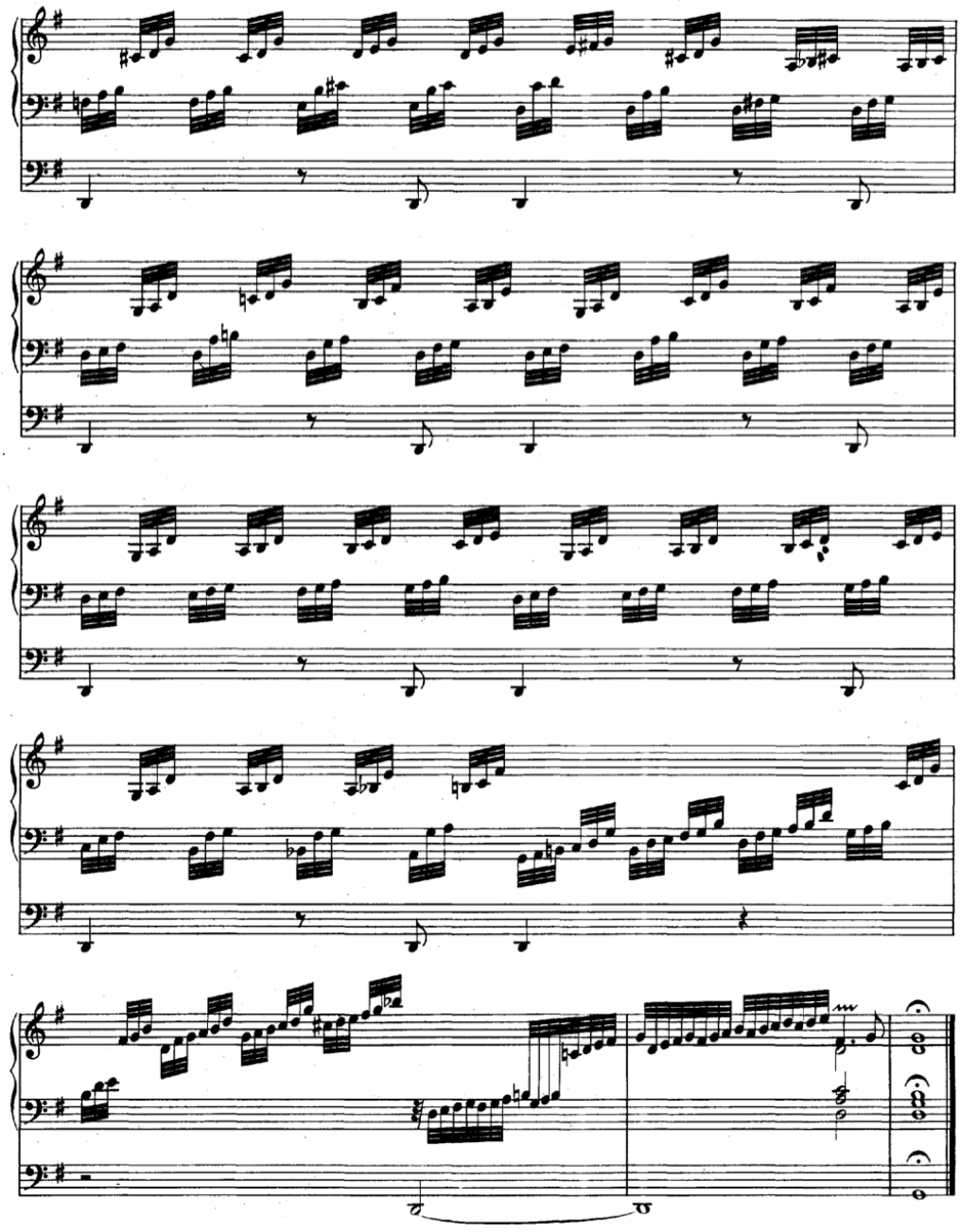




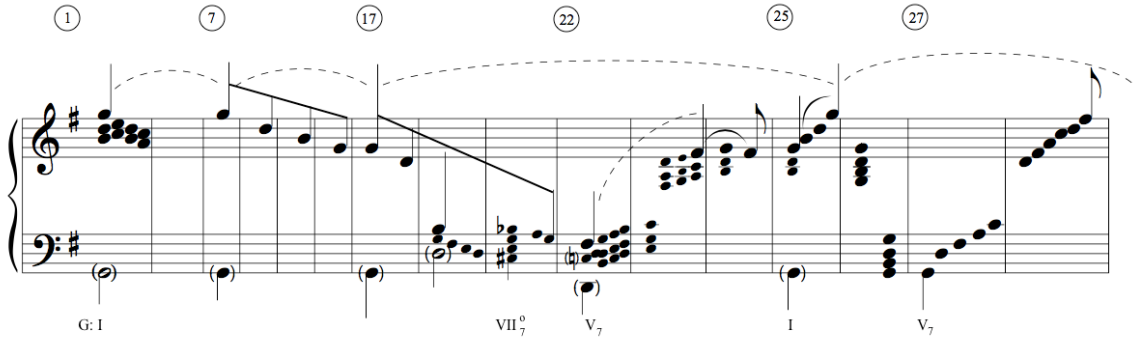


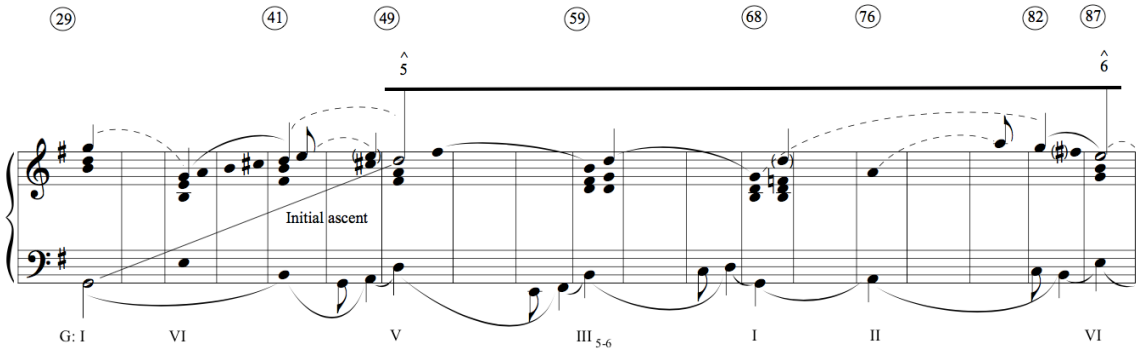

Lentement.

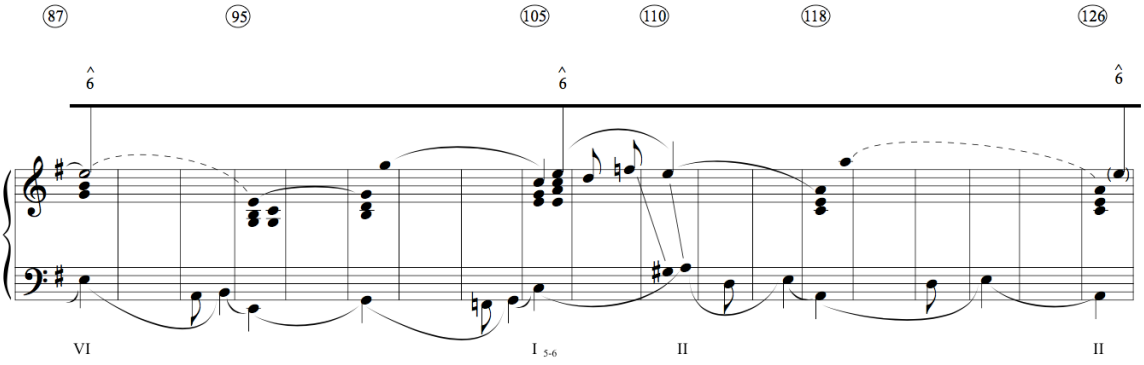


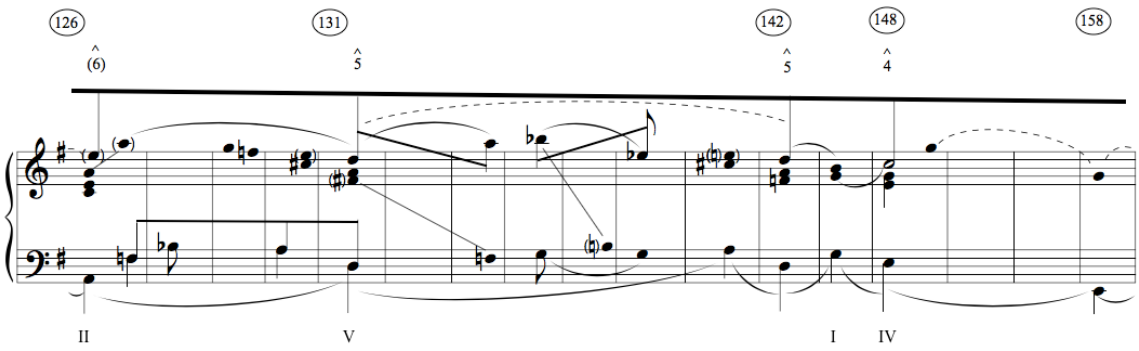


APPENDIX B: REDUCTION ANALYSIS OF *PIÈCE D'ORGUE*





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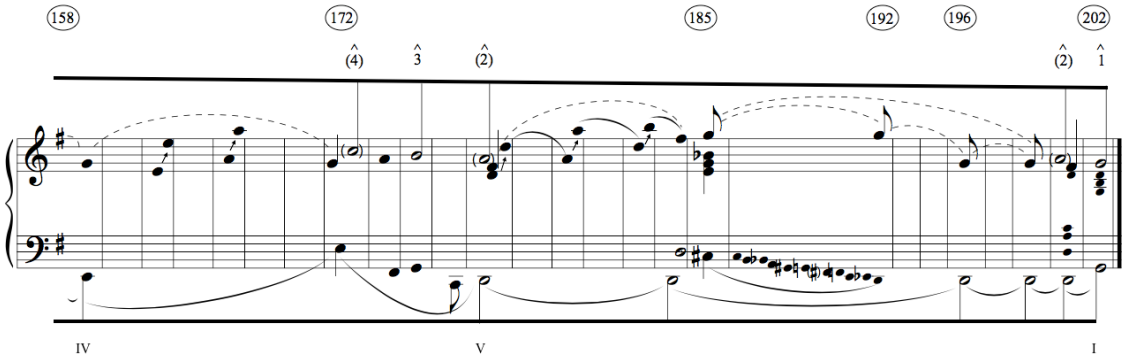
158
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IV
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I

Bibliography

-Primary Sources-

Bach, Johann Sebastian. *Bach-Gesellschaft Ausgabe,* edited by Ernst Naumann, Band 38. Leipzig: Breitkopf und Härtel, 1891.

Schenker, Heinrich. *Thirteen essays from the three yearbooks "Das Meisterwerk in der Musik."* Translated by Sylvan Kalib. PhD diss., Northwestern University, 1973.

_____. *Free Composition: volume III of New musical theories and fantasies [= Der freie Satz]* Translated by Ernst Oster. Hillsdale, NY: Pendragon Press, 2001.

_____. *Harmony.* Edited by Oswald Jonas. Translated by Elisabeth Mann Borgese. Chicago: University of Chicago Press, 1954.

-Secondary Sources-

Aldwell, Edward, and Carl Schachter with Allen Cadwallader. *Harmony and Voice Leading*. 4th ed. Boston, MA: Schirmer/Cengage Learning, 2011.

Beach, David. *Aspects of Schenkerian Theory.* New Haven: Yale University Press, 1983.

Berry, Wallace. "Metric and Rhythmic Articulation in Music." *Music Theory Spectrum 7* (Spring 1985): 7-33.

_____. *Musical Structure and Performance.* New Haven: Yale University Press, 1989.

Cadwallader, Allen, and David Gagné. *Analysis of Tonal Music: A Schenkerian Approach*. 3rd ed. New York: Oxford University Press, 2011.

Clendinning, Jane Piper, and Elizabeth West Marvin. *The Musician's Guide to Theory and Analysis.* 2nd ed. New York: W. W. Norton, 2011.

Cone, Edward T. *Musical Form and Musical Performance.* New York: W. W. Norton, 1968.

Cook, Nicholas. "Analysing Performance and Performing Analysis." In *Rethinking Music,* edited by Nicholas Cook and Mark Everist, 239-261. New York: Oxford University Press, 1999.

Forte, Allen. "Schenker's Conception of Musical Structure." In *Engaging Music: Essays in Music Analysis,* edited by Deborah Stein, 50-64. New York: Oxford University Press, 2005

Jonas, Oswald. *Introduction to the Theory of Heinrich Schenker: The Nature of the Musical Work of Art.* New York: Longman, 1982.

Kostka, Stefan, and Dorothy Payne. *Tonal Harmony: With an Introduction to Twentieth-century Music.* Boston: McGraw-Hill, 2000.

Laitz, Steven G. *The Complete Musician:An Integrated Approach to Tonal Theory, Analysis, and Listening*, 3rd ed. New York: Oxford University Press, 2012

Laukvik, Jon. *Historical Performance Practice in Organ Playing: An Introduction Based on Selected Organ Works of the 16th -18th centuries*. Translated by Brigitte and Michael Harris. Stuttgart: Carus, 1996.

Lester, Joel. "Performance and Analysis: Interaction and Interpretation." In *The Practice of Performance: Studies in Musical Interpretation,* edited by John Rink, 197-216. New York: Cambridge University Press, 1995

McClelland, Ryan. "Performance and Analysis Studies," *Indiana Theory Review 24,* (2003): 95-106.

Roig-Francoli, Miguel A. *Harmony in Context,* 2nd ed. New York: McGraw-Hill, 2011.

Rothstein, William. "Analysis and the Act of Performance." In *The Practice of Performance: Studies in Musical Interpretation,* edited by John Rink, 217-240. New York: Cambridge University Press, 1995.

_____. "Rhythm and the Theory of Structural Levels." PhD. diss., Yale University, 1981.

_____. "Rhythmic Displacement and Rhythmic Normalization." In *Trends in Schenkerian Research,* edited by Allen Cadwallader, 87-113. New York: Schirmer Books, 1990.

Schachter, Carl. *Unfoldings: Essays in Schenkerian Theory and Analysis*. Edited by Joseph N. Straus. New York: Oxford University Press, 1999.

_____. "Rhythm and Linear Analysis: Durational Reduction." In *The Music Forum, vol. 5,* edited by Felix Salzer and Carl Schachter, 197-232. New York: Columbia University Press, 1980.

_____. "Rhythm and Linear Analysis: Aspects of Meter." In *The Music Forum, vol. 6,* edited by Felix Salzer and Carl Schachter, 1-59. New York: Columbia University Press, 1987

_____. "Rhythm and Linear Analysis: A Preliminary Study." In *The Music Forum, vol. 4,* edited by Felix Salzer and Carl Schachter, 281-334. New York: Columbia University Press, 1976.

Schachter, Carl, and Hedi Siegel, eds. *Schenkerian Studies.2.* New York: Cambridge University Press, 1999.

Turner, John William. "Schenkerian Analysis and the Performance of Large-scale Structure." DMA. thesis, University of North Carolina at Greensboro, 2003.